WORKING WITH THE DISABLED HOMEMAKER

Compiled by

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Colorado Services for the Visually Impaired
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Introduction

The information in this booklet is taken primarily from the Rehabilitation Techniques in Homemaking Class presented by Ms. Julia Judson at Colorado State University. This useful information is compiled in a way that it is hoped will be helpful to anyone helping handicapped people to be more independent.

Many sources were used in compiling this information:

A Manual for Training the Disabled Homemaker, Monograph VIII. Howard Rusk, M.D., et al. New York: Institute of Rehabilitation Medicine.

Mealtime Manual for the Aged and Handicapped, Klinger, et al. New York: Simon & Schuster.

Handbook of Physical Medicine & Rehabilitation, Krusen, Kottke, & Elwood. Philadelphia: W. B. Saunders Co.

Rehabilitation Medicine, Rusk. St. Louis: The C. V. Mosby Company.

"Suggestions for more efficient communication with the hearing impaired aging person", Raymond Hull, Ph.D., University of Northern Colorado, Greeley, Colorado.

"Adjusting to Your New Hearing Aid", edited by Robert Traynor, Ed.D., & Keith Peterson, M.D., University of Northern Colorado, Greeley, Colorado.

"Suggestions to facilitate interaction with visually impaired adults", Grace Napier, Ed.D., University of Northern Colorado, Greeley, Colorado.

"Nutrition and the aging adult", Terry Sadler.

"List of resources for the visually impaired", Nancy Hey.

Articles on aging, Max Shirley, University of Northern Colorado, Greeley, Colorado.

Recreation for Blind Adults by Maurice Case, Charles C. Thomas Publisher, Springfield, Illinois.

"Management of the Hearing Impaired", Raymond H. Hull, Ph.D., University of Northern Colorado, Greeley, Colorado.

"Health Status of Old People", by Anthony Lenzer.

*Information compiled by Jane Quiroz

In working with the aging blind, it became apparent that in the majority of cases, other primary disabilities are present; which in many cases, are as disabling as blindness itself. No age grouping exceeds the frequency and severity of multiple disability of the aging. It was realized that to truly and effectively work with these so often forgotten, one must acquire a knowledge of other common disabilities, their impact, and aids and techniques.

Realizing the frequency of multi-disabilities present in the aging population; this compilation is presented to inform the lay person who works with handicapped persons. The booklet is organized as follows:

1. Common limitations of some of the most prevelant disabilities, especially of the aging person. The importance of this delineation is not only to provide a better understanding of the physical limitations of these disabilities, but also some basic recommendations to facilitate those who work with this individual, and certainly the individual himself or herself in management and decision making process in more complete self-actualization.

2. Leisure time activities and exercise have been set apart as a special area of concern especially for the aging and severely disabled since more often these are people who have lost the fulfillment of a job, the luxuries that are often obtainable by the increased financial income in pursuing "the American Dream". These activities become even more manifestly needed in view of the intrinsic restrictions of the disability and potential atrophy and increased disability that comes with activity.

3. The disabled person is often handicapped because of the nature of physical environment and insufficient knowledge, special adaptive equipment, self-help devices, and all too frequently, overlooked architectural barriers. These have been included under common barriers and suggestions to somewhat alleviate these problems.

The collection of materials includes a brief overview of the nutritional requirements of the aging person and selected references.

Contents

I. Functional limitations in relation to life tasks: cardiovascular disease, hemiplegia, arthritis, hearing loss, blindness, spinal cord injury, diabetes and aging in general and their respective management and decision making processes.

II. Implications of social, psychological, and cultural aspects of aging and blindness.

III. Leisure time activities, exercise, and activities of daily living of the physically disabled and aged - "A Special Consideration".

IV. Common Barriers Confronting the Disabled.

V. Nutrition and the Aging Adult.

VI. A General Bibliography.

The Homemaker with Cardiovascular Disease

Heart diseases encountered by the rehabilitation specialist can be divided into three general types according to Kottke in the Handbook of Physical Medicine and Rehabilitation.

Mechanical Derangements

This category includes conditions in which the valves or chambers of the heart are faulty, resulting in the interference with the forward flow of the blood. The heart performs inefficiently like a leaky pump. More work than normal must be performed by the heart to pump a given amount of blood; consequently, heart strain and fatigue result.

Increased Resistance to Blood Flow or Arterial Hypertension

In disease of this type, the heart must contract against a pressure that is greater than normal.

Decreased Energy Production

Changes in the heart or circulation reduce the energy output to below normal, limiting the heart's ability to respond to the demands of the body.

Heart failure may occur if any the the previous conditions are present. The restrictions imposed on a person who has experienced a heart attack are many. Consequently, he may experience any or all of the following:

1. shortness of breath
2. weakness of muscles
3. inability to stand for more than a short period of time
4. difficulty in lifting or bending or any task requiring strength or endurance.

5. possible weakness of one hand and arm
6. need for many rest periods during the day
7. need to pace activities to the person's energy level
8. special diet prescribed by the physician

The Homemaker with Hemiplegia

Hemiplegia results from damage to areas in one hemisphere of the brain thus causing paralysis in the opposite side of the body. Cerebral Vascular Accidents (CVA) occur when the blood supply to the brain tissue is impeded in one of several ways. Hemorrhage, embolism, and thrombus may block normal circulation. External trauma causing bleeding or compression within the cranial cavity has the same result.

Damage to the motor centers of the brain are most obvious. In addition, sensory and perceptual losses can be equally limiting in carrying out everyday activities. Impaired perception, spacial relationships, vision (hemianopsis) and touch may be present as well as one or more forms of aphasia. Cognitive abilities must be assessed to determine if the person can live and work safely and independently.

The amount of permanent damage and functional loss can vary from almost total recovery to confinement to a wheelchair if the patient survives the episode. Flaccidity or spasticity may be present in the limbs at various stages of recovery. or may become a permanent condition. Often the functional level attained depends as much on the early management of the patient as in the actual extent of damage. The age and general physical condition of the patient prior to the stroke as well as the extent of damage to the brain influence the medical management. Prevention of contractures, and ambulation at the earliest possible time are necessary.

It is well to know if the victim of a CVA has a cardiovascular condition which will limit activity in addition to the motor and sensory losses of hemiplegia.

When the patient is ready for homemaking training the therapist will find that the program must be adapted to a wide variety of possibilities. There may be need for training in strictly one-handed activities. However, if there is any possibility for use of the affected hand this should be encouraged. The patient may be using a cane. Balance, how to use the cane in conjunction with other activities is crucial for transporting items. In fact an assessment of all the factors mentioned in paragraph two should be made before a program is designed. (Some one else may have done much of this and it should be in the patient's record). It is also important to know if the prognosis indicates further improvement in physical skills.

The training program should begin with simple activities sometimes repeated several times, and move to the more complex. A confused trainee may become even more confused if asked to change familiar methods. A strange setting, as the hospital or rehab. center, is confusing in itself. The trainee may function at a higher level at home and can be encouraged to try out activities at home when on leave.

Activities should be chosen which will lead to success. An exception to this may be necessary if, after extensive training, the trainee has an unrealistic conception of his/her ability to function independently. In such a situation allowing the person to fail may be an effective way of presenting reality.

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THE ARTHRITIC HOMEMAKER

Prevention of deformity through protection of joints is an often neglected aspect in the management of arthritis. Yet protection to the point of inactivity can result in fixation of joints and loss of muscle strength. Therefore, it is important that joints be moved to the tolerance of pain and that enough exercise be given to maintain strength.

Flexion contractures are typical sequelae of arthritis, and in the hands deviation to the ulnar (little finger) side occurs. Consequently, it is important to maintain the normal anatomical position during activity and at rest. Activity which encourages extension of joints rather than flexion should be emphasized.

If weight bearing joints are affected:

Avoid overweight. Excess weight causes extra trauma to the knees and ankles. Follow a physician's recommendations for weight reduction.

Wear comfortable shoes that support the foot and keep the ankles in good alignment.

Change position frequently. Alternate sitting with standing and avoid doing either long enough to become "stiff".

Select chairs or stools that have firm seats and perhaps are slightly higher than normal.

Avoid lifting and carrying. The weight of an object is added to the person's weight as the total load imposed on the weight-bearing structures.

If hands are affected:

Work with fingers extended - as in pushing up from a chair, using a sponge (a large one helps), dusting, pushing drawers shut, using a rolling pin.

To help control ulnar deviation:

1. Turn screw tops, faucets, doorknobs, key in locks, etc., toward the thumb (off with the right hand, on with the left). Become ambidextrous!
2. Beat counter clockwise.
3. If extreme pressure is required use an appropriate device.
4. Use as much of the surface of the hand as possible - avoid finger tip activity. Minimize fine finger motions.
5. Adjust size of handles of utensils for a safe, comfortable grip.

Avoid any activity that involves holding joints or using muscles in one position for any undue length of time -- as in playing cards. (Use a holding device).

Do not attempt an activity that cannot be stopped immediately if cramps or pain results.

Use two hands to perform activities which you may have used only one for previously - as in moving a pan or casserole.

Lift with sides of hands rather than fingers and keep wrists straight.

To conserve strength:

Push, roll or slide heavy objects.

Use lightweight kitchen equipment.

Give special attention to storage arrangements. Leave heavy objects on counter tops; store at place of first use with heavier objects within easiest reach.

Some exercise is needed, but avoid fatigue. Reach and bend occasionally.

Rest as much as the physician recommends. Frequent rest periods may be more helpful than a long rest once each day.

Plan activities carefully.

OT Department
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HEARING EVALUATION

OF THE ELDERLY

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HEARING EVALUATION OF THE ELDERLY

Many changes have taken place in this century, but scarcely any have been more significant than the achievement of a long life for most Americans. Factors contributing to greater longevity have been the discoveries of modern medicine which have reduced the death rate among the young and middle-aged and modern technology which has reduced the exhausting labor known by our grandparents. As a result, the population of individuals age 65 years and over has increased from 3.1 million in 1900 to 20 million in 1971, and by the year 1980, it is estimated that they will number approximately 24 million (D.H.E.W., 1963).

There are an estimated 15 million individuals in the United States with some degree of hearing impairment (National Advisory Council of Neurological Diseases and Stroke, 1969). Approximately 20% of this population is over age 65, accounting for approximately 3 million hearing impaired persons (Metropolitan Life Insurance Company, 1966). Thus, 72 out of 1,000 non-institutionalized persons are hearing impaired and over 65 years of age (National Center for Health Statistics, 1975). These figures, however, appear extremely conservative in light of the large numbers of auditorily handicapped elderly persons reported by practicing audiologists. Leutenegger and Stovall (1971) have indicated, that of the 20 million individuals over 65, 6% or 1.2 million, live in nursing/retirement homes. According to Chafee (1967), 90% of this confined population is hearing handicapped.

What does "old age" mean? Age 65 has been used for so long to denote retirement age that it is difficult to think of an individual over age 65 as anything but "aged." To a child of 6 years, a tall child of 13 years seems "old."

To a teenager, a worker, age 30, is "old." To a "young adult," retirement seems to bring old age. Those in their 60's define "old age" as someone in the late 80's or 90's. To them old age implies being bedridden, dependent, and removed from an active, participating life (Shock, 1960). "Old age," then, is, indeed, arbitrarily defined. There are individuals who appear, at age 50 years, to be "old" in regard to their activity, vitality, and their state of health. On the other hand, there are individuals at age 70 years who appear to be young in terms of their health, social activity, and general vitality. Because health statistics on hearing and aging use 65 years as a reference point for aging, information in this chapter will also use that age. However, this reference point will be for convenience sake since we know that the beginnings of aging in relation to the auditory mechanism begins much before age 65. It is interesting to consider that although people are living longer, this does not necessarily mean that the aging process has been reversed or slowed appreciably. Rather, better and/or more frequent medical attention has averted more of the situations which would have been fatal in the past.

The multitude of problems associated with the elderly individual's ability to function auditorily are encompassed in the term "presbycusis." Presbycusis includes (a) the pathology of the aging ear, (b) the related auditory discrimination difficulties, and (c) the many other associated social-psychological problems encountered by the individual.

Schuknecht (1974) views aging as a "complex integration of inherited defects, injury, environmental exposure, accumulation of DNA errors (causing a decline in capability of mitosis for repair), genetic makeup, accumulation of pigment, and chemical changes in the cells." Presbycusis is presented as an accumulation of degenerative changes in the auditory system determined by aging but depending upon heredity, diet, environment, and use. He feels it is difficult to distinguish between heredity factors in aging as it relates to hearing impairment and presbycusis.

To look at the possible locus for the structural degenerative changes in regard to the aging auditory mechanism, the following areas will be discussed individually and then as a whole:

A. The outer ear

B. The middle ear

C. The cochlea

D. The eighth nerve and central auditory system

The Outer Ear

A typical characteristic of the pinna of the elderly individual is an increase in size and a decrease in elasticity. The fine branny, scaliness, dryness, and inelasticity, with loss of rebound in the epithelium are the result of degenerative processes (Johnson, et al., 1964). Loose, unpadded skin covering falls at the mercy of gravity. Greater growth of hair within the folds of the auricle is often seen among elderly individuals, especially among males.

No matter to what extent the aging process effects the outer ear relative to structure and appearance, those changes, in all probability, do not reflect themselves auditorily. However, the flaccid pinna can cause a false conductive hearing loss if the ear phones are not placed properly. The pressure on the soft tissue of the pinna can force it to occlude the orifice of the external auditory meatus.

The Middle Ear

Structural changes of the middle ear appear to be more specific and in all probability may be related to auditory difficulties experienced by some aged individuals. Among the changes that appear to occur with aging are those described by Rosenwasser (1964) including ossicular atrophy predominant in the joint of the stapes and caudal joint of the malleus. There may be atrophy of the tensor tympani

muscle, along with a thinning of the tympanic membrane. Rosenwasser indicates that since many conditions of aging depress general body functions, this could explain the high incidence of infection and hearing difficulties in the elderly. Leake (1963) reports that auditory impairment seen in presbycusis may include middle ear muscle dysfunction. Acoustic signals were delivered to the ear of cats in whom were electrodes implanted within the reflex loop of the middle ear muscles. Leake found that since these muscles may contribute significantly to auditory signal analysis and attentiveness, the reduction of hearing in aging may not be so much a disturbance in the sensory-neural mechanism itself, but a gradual reduction of muscle function in the middle ear.

Glorig and Davis (1961) investigated the involvement of the conductive mechanism in presbycusis using 164 businessmen and residents of a home for old soldiers. The subjects did not have a prior history of excessive noise exposure. They ranged from twenty-five to eighty years of age. Air and bone conduction threshold measurements were conducted at frequencies of 500, 1 k, 2 k, and 4 k Hz. The older subjects had a noticeable air-bone gap at 4 k Hz along with a general absence of loudness recruitment. The authors attributed this phenomenon to loss of function of the conductive mechanism and referred to it as "conductive presbycusis."

In view of conflicting reports regarding the existence of conductive presbycusis, Satoloff, et al. (1965) tested men and women between 62 and 82 years of age. They found little, or no discrepancy between air conduction and bone conduction, thus failing to support the conductive element noted by Glorig and Davis. Satoloff's findings support the majority of research which shows that presbycusis is primarily a sensory-neural phenomenon.

Goodhill (1969) provides information about an elderly patient which might support the possibility of a conductive element in presbycusis. A 71 year old male patient who was generally in good health, had complained of a 30-year

progressive bilateral mixed hearing loss. There were no indications of childhood ear infections and no family history of deafness. In 1958, the patient had a right stapes operation which resulted in no improvement and the progressive loss continued. In 1962, an aid was fitted unsuccessfully. In 1967, he was diagnosed as having a primary malleal fixation with no otosclerosis. The audiogram, however, was that of cochlear presbycusis, demonstrating probable cochlear pathology but with some conductive element. Following surgery, the audiometric picture was reversed. His loss was then found to be primarily conductive with only a slight sensory-neural involvement, the conclusion being that there appeared to be a real relationship between the mass and stiffness of a fixed malleus and depression of bone conduction acuity. The author concluded that presbycusis may not be only sensory-neural but also conductive due to senescent ossicular chain atrophy.

The Cochlea

Research into the anatomic locus of presbycusis has generally supported the area of the cochlea as a primary site of the degenerative processes involved. Conditions of the outer and middle ear are usually minimized, if mentioned at all. Most of the literature on presbycusis deals with the hearing test results for elderly patients and the histological changes of their cochleas found at autopsy. Despite extensive studies of the cochlea, spiral ganglion, mid-brain, and cortex, there is no universal agreement as to the correlation between decreased hearing sensitivity, the loss of auditory discrimination ability, and the site of lesion for patients diagnosed as having presbycusis.

There are approximately 35,000 nerve fibers in the cochlea which send coded information into the auditory cortex. These cells are fixed in number and cannot regenerate or reproduce themselves. A study by Schuknecht, et al. (1955), found that up to 75% of the spiral ganglion cells in cats must be damaged before

threshold elevations occur, so a gradual diminution in these cells, especially over an extended period of time, would probably not be perceptible to the person until considerable pathology was present.

Clinically, presbycusic changes in the cochlea probably start at birth. As Schuknecht (1974) has stated, "This is deafness of aging, not of the aged."

After detailed studies of human temporal bones, Schuknecht (1964) noted four distinct types of presbycusis. They are as follows:

1. Sensory presbycusis--caused by atrophy of the organ of Corti and degeneration of hair cells, beginning at the basal end of the cochlea and moving towards the apex. Hearing test results in these cases show an abrupt hearing loss at 8000 Hz and above. This is the least common of the four types.
2. Neural presbycusis--results from the loss of neurons in the auditory pathways and cochlea. This usually becomes noticeable when 30-40% of the neurons are lost or damaged. There is a relatively more severe speech discrimination problem than with the first type. Although 90% of the cochlear nerves can be destroyed without affecting pure-tone thresholds, speech discrimination is affected much more quickly. Amplification frequently does not benefit these persons.
3. Stria vascularis atrophy or metabolic presbycusis--is often seen where there is a family history of hearing loss and an insidious onset in the third or fourth decade of life. Degeneration takes place in the apical area of the cochlea and causes a flat pure-tone hearing loss to about 50 dB, at which point speech discrimination is affected. Schuknecht feels this is probably a genetically determined condition. Amplification is often found to benefit these persons.

4. Inner ear conductive-type presbycusis (somewhat theoretical)--although there are no evident histological changes, Schuknecht feels an increase in the stiffness in the supporting structures of the cochlear duct may cause a mechanical-type "conductive" loss. The greatest impairment is produced at the basal end of the basilar membrane where it is the thickest, while the fewest changes occur near the apical end where it is thinnest. Although in his 1964 account Schuknecht was somewhat vague and uncertain when describing this type, during his 1974 presentation he spoke with more confidence regarding the existence of this conductive phenomenon. He indicated that when each of these four types occur alone, they can be specifically identified.

Proctor (1961) compiled information on findings related to the cochlear pathology involved in the aging ear. He stated that in the case of presbycusis, the "etiologic mechanism is assumed to be an atrophy of the basal coil of the cochlea." Arteriosclerosis and high blood cholesterol might be predisposing factors. It was surmised that progressive deafness due to aging might be caused by atrophy of nerve fibers. Degeneration of the specific elements in the labyrinth (spiral ganglion) would be regarded as a secondary factor. He felt that contributory factors involved in the causation of presbycusis could be "the procasses of the middle ear, arteriosclerosis, toxic influences, avitaminosis, and hormonal deficiencies." Senile hyperostosis of the cranial bones is to be considered as the primary cause of pure idiopathic presbycusis.

Kirikae, et al. (1964) describes presbycusis as resulting from epithelial and neural atrophy. They define the causes of presbycusis as lesions of the inner ear, especially the organ of Corti and the spiral ganglioncells. They list two types of degenerative changes: (1) atrophy of the spiral ganglion (neural atrophy), and (2) angiosclerotic degeneration of the inner ear (epithelial atrophy).

Jorgensen (1961), while conducting histological studies of 25 temporal bones from patients ranging in age from 2 months to 80 years of age, discovered a loss of ganglion cells in the basal portion of the cochlea among older patients along with thickening of the capillary walls in the stria vascularis. The pathology involving the stria vascularis was thought to be related to arteriosclerosis. Jorgensen felt that the thickening could effect not only the oxygen levels of the cochlear duct, but correspondingly, the electrical potentials. Miller (1965) contends that clinical studies do not yet confirm the effect of arteriosclerosis on the cochlea.

Researchers of the pathology of presbycusis are becoming increasingly aware that it is difficult, if not impossible, to separate the effects of noise and the use of drugs for medication from the normal process of aging when attempting to discover the locus of presbycusis (Johnson and Hawkins, 1972). They discovered hair cell degeneration in infants and newborns a few hours old. Thus, "in some instances, the hair cell degeneration must have begun in the uterus." There was clear evidence of nerve degeneration secondary to hair cell degeneration by the early teens in the extreme basal turn of the cochlea. This degeneration progressed steadily with advancing years.

Hawkins (1973) feels that the effects of ototoxicity on the ear and the degenerative changes leading to presbycusis are so similar that it is difficult to differentiate between them. Since noise exposure and/or ototoxic injury are such common occurrences during one's lifetime, he postulates that purely metabolic presbycusis must be a rare occurrence. Hawkins, then, refers to presbycusis as the cumulative effects of noise, drugs, as well as time.

Even though one of the primary sites of lesion for the degenerative process observed in presbycusis appears to be the cochlea, special emphasis in research regarding the phenomenon of the devastating discrimination problems

encountered by the older individual has been focused on the eighth nerve and central auditory mechanism.

The Eighth Nerve, the Brain Stem, and the Auditory Cortex

Simple atrophy of the eighth nerve has been observed by Rosenwasser (1964), Schuknecht (1955 and 1964), Harbert, et al. (1966), Matzker (1958), Rosen, et al. (1962), and others. In an investigation conducted by Taniewaki (1963), the concept of nerve deterioriation was further substantiated. He found that defective hearing in senile patients depends either on the changes in the sensory epithelium of the cochlea or changes in the eighth nerve. Taniewaki concluded that it is difficult to determine how much the loss of hearing of the aged depends on the extensive use of tissue and how much is the expression of a true pathological process.

Research involving the central auditory pathways has provided information in understanding the auditory difficulties of the aged. Kirikae, et al. (1964) conducted histopthological studies of nuclei of the auditory pathways, i.e., the superior olive, inferior colliculus, and the medial geniculate nuclei at autopsy. For all older subjects, premortal speech discrimination was impaired as compared with younger subjects when subjected to frequency distortion of speech (low pass filter) and interrupted speech. Elevation of auditory threshold, especially the high frequencies, was also revealed. There appeared to be no question that presbycusis is caused in part by degeneration of tissues within the inner ear, however, senile changes of nerve cells of the central auditory pathway was also considered important. They concluded that the auditory characteristics seen in presbycusis are probably the result of degeneration of the central auditory mechanism compounded by the results of pathology within the cochlea.

An investigation conducted by Hansen, et al. (1965) demonstrated results similar to the study above. Ten subjects aged eighty years and older were

evaluated. Two other subjects were age sixty and sixty-nine years. All were affected by symmetrical hearing loss for the high frequencies. For ten of the subjects, histological examinations showed alterations in the basal cochlear pathways which could explain hearing loss for the high frequencies. Hearing loss for the low frequencies was assumed to be exclusively centrally located. One subject with a normal cochlea showed deterioration in the cochlear branch of the eighth nerve as well as in the central auditory pathways. In another, a hearing loss on the right side was thought to be caused by peripheral as well as central pathological alterations. The causes of the degenerative alterations were found to be partially due to arteriosclerosis and partially senile atrophy.

Hinchcliffe.(1962), in an exhaustive investigation regarding the anatomical location of presbycusis, has found that even though degenerative changes are seen throughout the auditory system and apparently all contribute to the phenomenon of presbycusis, "it seems more likely that changes in the brain are primarily responsible for the overall audiologic picture of presbycusis." Jerger (1973) further investigated the concept of phonemic regression by comparing the responses of young normally hearing individuals, young subjects with sensory-neural hearing loss, and elderly individuals with equal hearing loss to various auditory tasks. The tests utilized included auditory discrimination tasks in quiet, at a 5 dB sensation level, in a competing message condition, and with 50 percent signal compression. Jerger concluded that when comparing the results of young and elderly individuals with essentially equal pure-tone thresholds, "we must look beyond the cochlea to explain the loss in speech discrimination unique to the elderly." Jerger concurs with Hinchcliffe (1962) that central auditory system dysfunction is the primary locus of presbycusis.

Response to Standard Auditory Measures by the Elderly Client

There are certain characteristic auditory responses observed by the audiologist when assessing the aged client. A compilation of typical audiometric

results seen among the elderly are presented here.

Pure-tone Audiometric Configurations. As stated by Jerger (1973), "The aging process produces systematic changes in each of the two critical dimensions of hearing impairment--loss in threshold sensitivity and loss in the ability to understand suprathreshold speech."

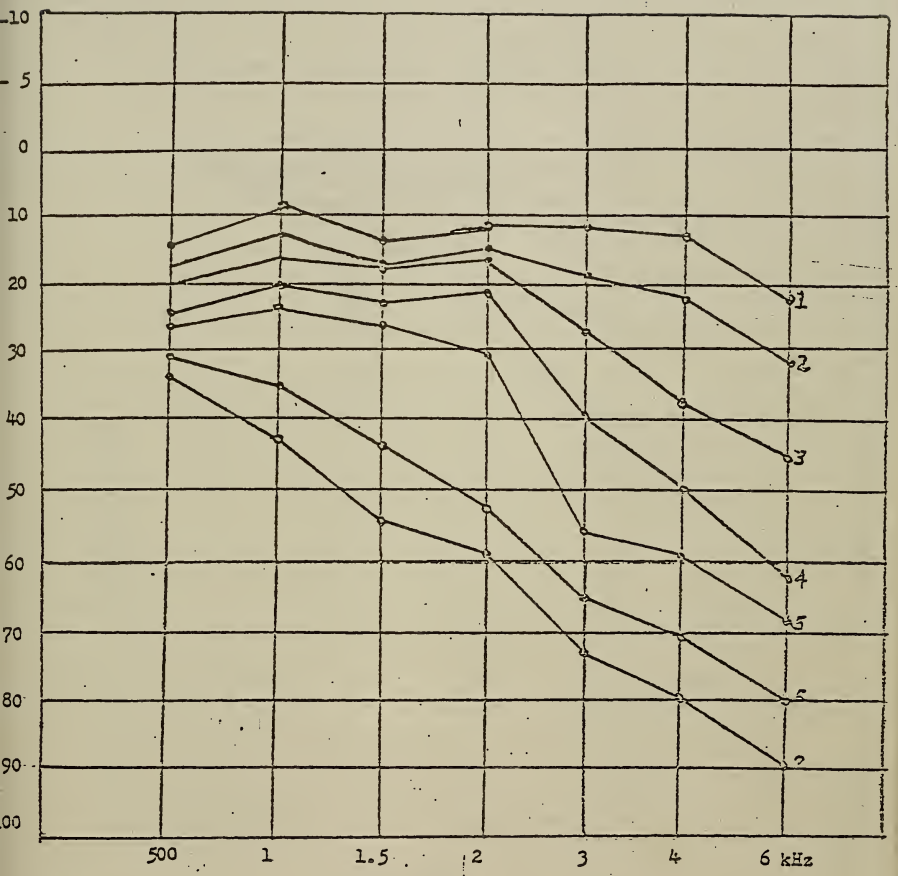
A principal auditory symptom of the phenomenon described as "presbycusis" is seen as an inability of the elderly individual to understand the speech of others when auditory sensitivity appears adequate for communication purposes. A typical statement by the elderly often noted by the audiologist is, "I can hear you, but I cannot understand what you are saying." The elderly client is probably relating a very accurate description of the situation. The sensory mechanism may be impaired but not so much that a younger individual would not be able to function with it adequately. The central auditory mechanism may not allow the elderly person to utilize well what he/she receives auditorily. It is up to the audiologist to interpret the audiometric results, differentiating between the effects of the peripheral sensory-neural element and the effects of the central involvement that hinders efficient auditory perception and, thereby, communication.

The pure-tone test results generally reveal a bilateral sensory-neural hearing loss sloping downward through the frequencies above 2 k Hz. Miller (1965) found this slope in 38% of a group of individuals over age 65. Average hearing loss ranged from 16 to 60 dB bilaterally. Generally, the loss is greater for men in frequencies above 4 k Hz, whereas women show a greater loss toward the lower frequencies (D.H.E.W., 1965). Miller attributes the difference in the high frequencies to greater noise exposure in men than in women. Hinchcliffe (1962) reaffirms the location of a more marked impairment in the higher frequencies. The characteristic high frequency hearing loss in the elderly was also reported by early investigators such as Bunch (1931) and Beasley (1938).

Glorig, et al. (1957) reported average pure-tone thresholds of individuals ranging from ten to seventy-nine years of age. These composit thresholds are shown in Figure 1. The greatest impairment is in the higher frequencies, beginning with a slight degree at ages ten to nineteen years. At ages sixty to sixty-nine, some decrease in auditory sensitivity begins to appear in the lower frequencies.

Hinchcliffe (1962) plotted median pure-tone thresholds as a function of age in Figure 2. Thresholds for a wider range of frequencies show the dramatic impact of aging on high frequency hearing.

Traynor and Hull (1974) obtained mean pure-tone thresholds for one-hundred-twenty confined elderly individuals between ages sixty-five and ninety. Their findings were compared with those of Miller and Ort (1965) who investigated hearing function in a similar population. The results of both studies are presented in Figure 3. The averaged thresholds of the two studies show good agreement. The audiometric configuration is relatively flat but slopes gradually toward the high frequencies above 2 k Hz. The impact of presbycusis cannot be appreciated, however, without considering speech reception and discrimination capabilities.



Ages

1 - 10-19
2 - 20-29
3 - 30-39
4 - 40-49
5 - 50-59
6 - 70-79
7 - 70-79

Fig. 1 Median hearing losses for males ages 10 to 79. Data are converted to the ANSI, 1969, reference. Adapted from Glorig, et al. - J. Am. Acad. Ophthalmol-Otolaryng., Monograph, 1957.

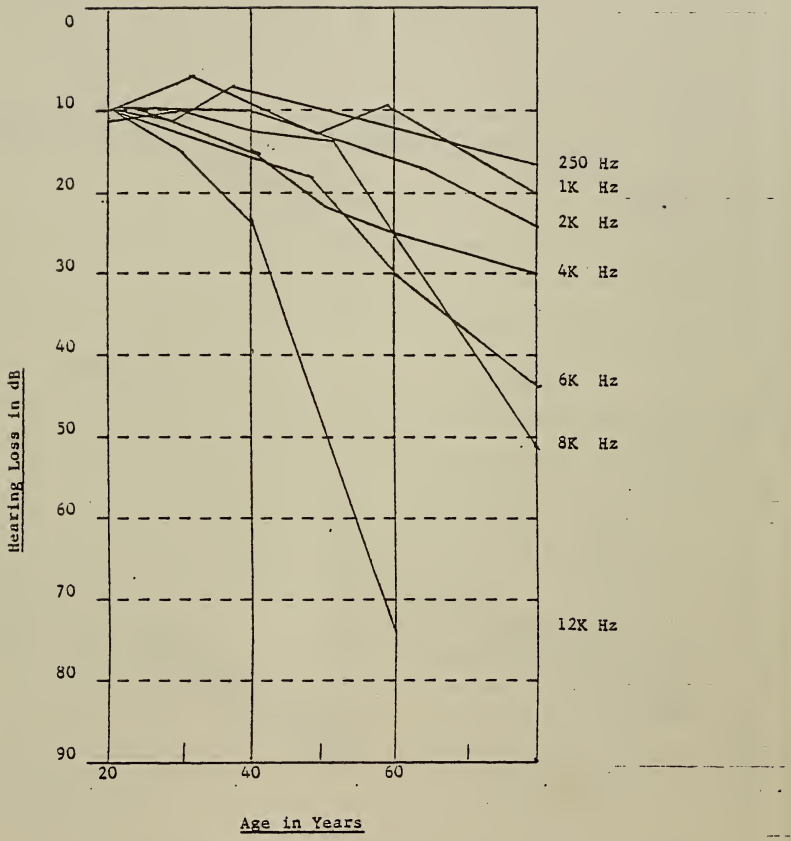


Fig. 2. Threshold sensitivity for hearing as a function of age. Median hearing losses in decibels re median threshold at 21.5 years of age. Adapted from Hinchcliffe, R. Acoustica, 9, 303-308, 1959. Cited in Hinchcliffe, R. J. Speech and Hearing Dis., 27-301-310, 1962.
(Threshold levels have been converted to ANSI, 1969).

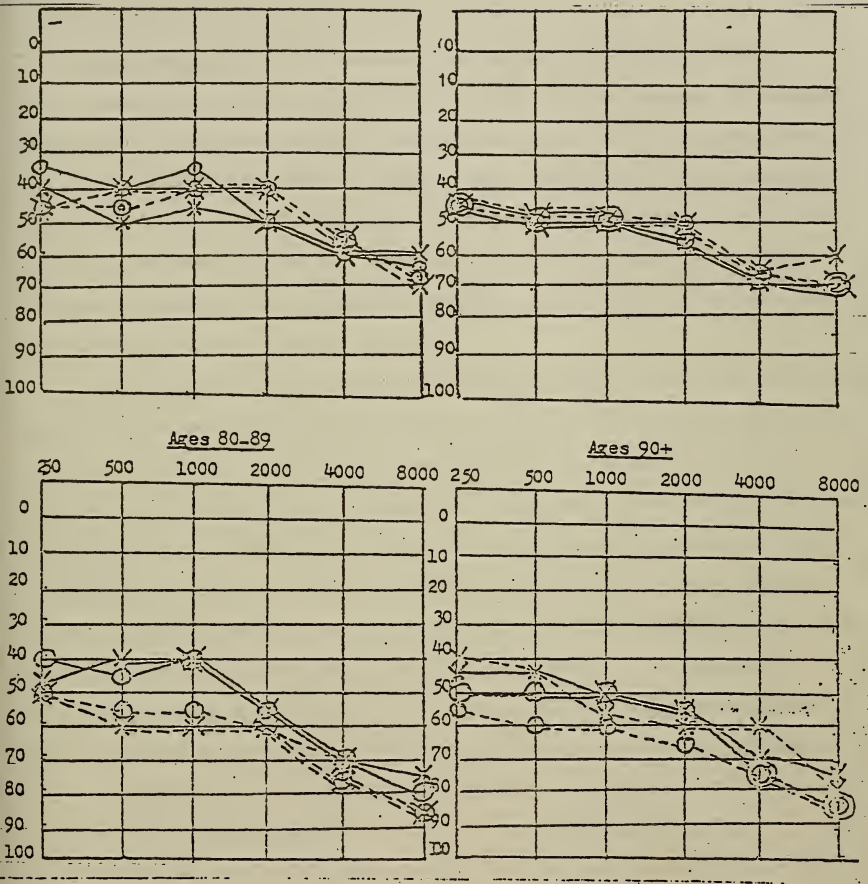


Fig. 3. Comparative mean pure-tone thresholds for confined elderly persons. Adapted from Traynor, R. and Hull, R. Unpublished research, 1974; Miller, M. and Ort, R. Octo-Oto-Laryng., 59, 33-44, 1965. (All threshold levels have been converted where necessary to ANSI, 1969.)

Speech Perception. It is difficult to imagine that the high frequency sensory-neural hearing loss noted in presbycusis is the sole cause of the auditory discrimination disabilities noted in the elderly. Jerger (1973) concluded that the locus of "phonemic regression" (Gaeth, 1948), or the loss of ability to understand speech in light of relatively good peripheral hearing appears to be central rather than peripheral phenomenon. Whether the locus of phonemic regression is peripheral or central, the phenomenon is present in many elderly individuals and constitutes one of their greatest handicaps.

To the lay person, the confusions of auditory messages seen among the elderly may become synonymous with the term "senility." The confusions may be amusing to some as in the case of "Old Uncle Joe" who confuses "Sue is buying a new gown." with "We're all going to town." To Uncle Joe, however, the confusion is embarrassing and can result in withdrawal from other possible communication situations. He may be a bright, alert elderly person but with a devastating auditory discrimination problem. Willeford (1971) sites an interesting doctoral dissertation (Gaeth, 1948). Gaeth approached this investigation with "the observation . . . that certain patients show much greater difficulty in discriminating the phonemic elements of speech than would be expected on the basis of their pure-tone scores" (Willeford, 1971). He describes the characteristics of phonemic regression as follows:

1. Audiologically there is a mild or moderate sensory-neural loss.
2. The decrease in the speech average for pure-tones is consistent with the threshold drop in responding to connected speech.
3. There is more difficulty in speech discrimination tests than expected from the pure-tone loss.
4. Phonemic perception difficulty does not parallel a general decay in mental capacities.

5. The patient tends to blame his trouble on his deficiency in auditory sensitivity.

6. Phonemic regression appears more frequently in individuals over fifty years of age, but a substantial number of older individuals with hearing losses do not display the difficulty. Therefore, age alone cannot be considered the sole cause.

Jerger (1973) investigated the ability of the elderly to discriminate auditorily by studying the performance - intensity function for phonetically balanced monosyllabic words. He was thus, able to determine a maximum PB score (PB max) for each ear of each subject. His investigation was based on 4,095 ears of 2,162 patients ranging in age from six to eighty-nine years. The number of ears in each decade ranged from a maximum of 740 in the sixty to sixty-nine year range, to 109 in the decade from eighty to eighty-nine. All PB test materials were NDRC lists one through six recorded on magnetic tape. Average PB max as a function of age and hearing level can be seen in Figure 4. There is a dramatic drop in auditory discrimination scores with both advancing age and decreased averages.

When the data are averaged across hearing levels for each age group, the change in auditory discrimination for PB words is dramatic as can be seen in Figure 5. The effect is somewhat exaggerated because the older subjects had poorer hearing.

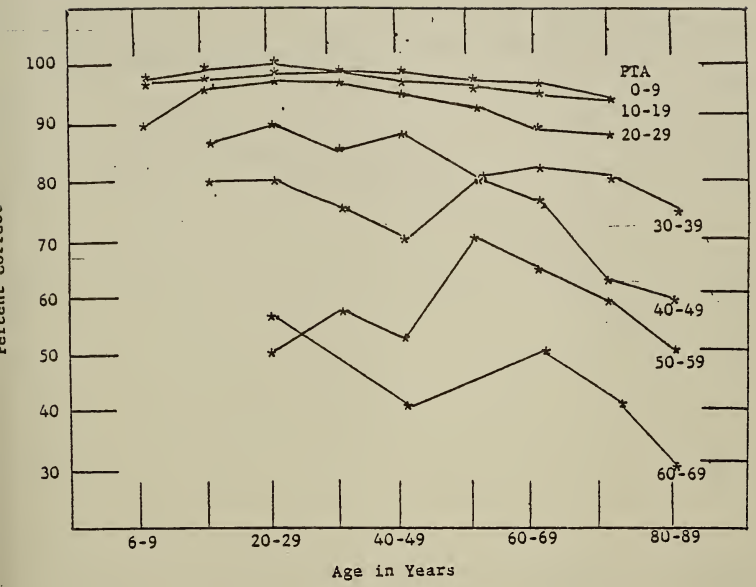


Fig. 4. Average PB max as a function of age with pure-tone average held constant. Note systematic decline in PB max with advancing age. 2,162 patients, 4,095 ears. Adapted from Jerger, J. Adv. Oto-Rhino-Laryng., 20, 115-124, 1973.

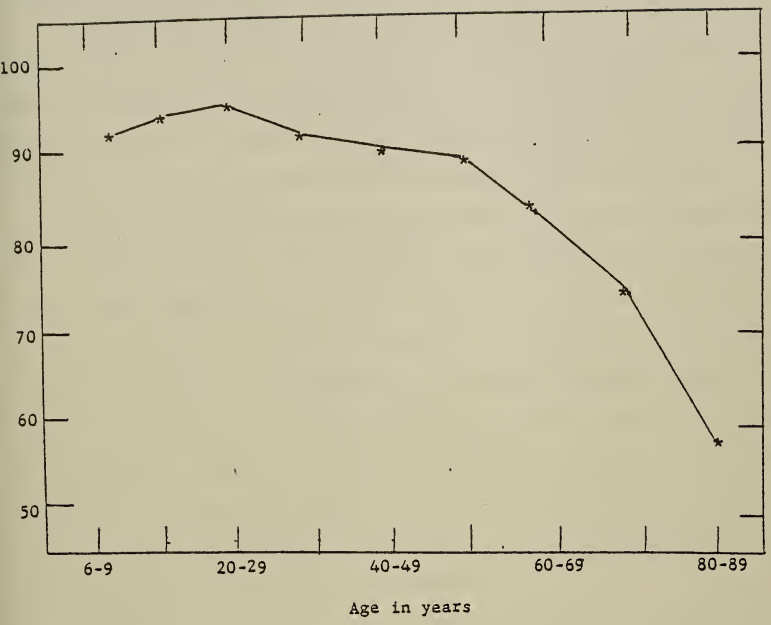


Fig. 5. Average PB max as a function of age. 2,162 patients, 4,095 ears. PTA = 0-69. Adapted from Jerger, J. Adv. Oto-Rhino-Laryng., 20, 115-127, 1973.

Responses by the Elderly to Special Auditory Assessment Techniques

Tests for Recruitment. The presence of recruitment in a patient with sensory-neural impairment is indicative of cochlear pathology and lack of it is a sign of pathology along the neural pathways. Investigators have studied recruitment in presbycusis. Studies by Jerger (1960) indicated that recruitment is not necessarily present in presbycusis despite sensory-neural hearing loss.

Pestalozza and Shore (1955) studied loudness recruitment in presbycusics with a monaural loudness balance procedure. Twenty-four elderly individuals were tested. Twenty percent of the subjects demonstrated complete recruitment, 30% showed partial recruitment, and 50% showed none. Since the phenomenon of loudness recruitment is found to be characteristic of cochlear pathology, these results support the view that in many cases, presbycusis is due to pathology of higher auditory centers. Hinchcliffe (1962) concludes that the absence of recruitment indicates that degenerative changes in the cochlea are not wholly responsible for threshold shifts in presbycusis. Goetzinger, et al. (1961), however, found only 15% of the males to have a lack of recruitment.

More recent investigations of loudness recruitment have utilized acoustic reflex measurements. Albertine and Kristensen (1970) report that loudness recruitment as measured by the loudness balance technique correlates well with the middle ear reflex procedure. The clinical value of acoustic reflex measurement has been demonstrated. There are, however, no studies which present normative data relative to the strength of the acoustic reflex among aged clients. It would seem logical that if recruitment is not observed in large numbers of elderly clients, then the same would hold true in regards to the acoustic reflex. Traynor (1975), in an unpublished doctoral dissertation, studied the reliability of the use of impedance audiometry for assessment of elderly individuals in the health care facility environment compared to standard air and bone conduction evaluation techniques.

The subjects ranged in age from 78 to 92 years, and all were confined elderly persons. During that investigation, acoustic reflexes were elicited in individuals with moderate sensory-neural hearing losses. Twenty percent of the subjects demonstrated such rapid fatigue that acoustic reflex measurements could not be made, while another twenty percent revealed absent reflexes in at least one ear. Sixty percent of the subjects did not show acoustic reflexes that would be indicative of recruitment, while forty percent did demonstrate reflexes at normal or near normal intensity levels. If acoustic reflex measures do, indeed, indicate loudness recruitment when there is a sensory-neural hearing loss, then the majority of these subjects could not be considered as having primarily sensory disorders. It must be noted, however, that subjects in this investigation were quite elderly.

Some authors have indicated auditory discrimination scores may indicate the presence of recruitment. Hirsh, Palva, and Goodman (1954) found that a reliable relationship can exist between low discrimination scores and recruitment if the hearing loss is greater than 20 dB. Pestalozza and Shore (1955), however, report this not to be true of older individuals and suggests that phonemic regression may be present in the absence of cochlear damage. They indicated that the absence of recruitment might indicate lesions in the spiral ganglion cells or nerve fibers which are most commonly responsible for presbycusis. These authors also suggest that since discrimination scores in presbycusis are generally poor, tests for recruitment should be used as the deciding factor in diagnosis.

Jerger (1973) conducted an interesting investigation concerning the effect of loudness recruitment on auditory discrimination capabilities among the elderly. Acoustic reflex measurements were utilized to determine the presence of recruitment as opposed to traditional loudness balance procedures. Discrimination scores were compared for two groups of twelve elderly individuals, each with presbycusis; one group demonstrating recruitment and one without. A third group of subjects, as

controls, consisted of twelve young persons with recruitment. Three measures were compared between groups: (1) the pure-tone audiogram; (2) the PB max score; and (3) the sensation level of the acoustic reflex. Presence or absence of recruitment was defined by the sensation level at which the acoustic reflex was elicited for frequencies of 500, 1K, 2K, and 4KHz. Acoustic reflex levels and air conduction thresholds for the three groups were not substantially different. Jerger concluded that "the disproportionate loss in speech understanding in aging patients is apparently not strongly related to the loudness recruitment phenomenon."

In summary, despite the pure-tone configuration which would suggest cochlear involvement, in many elderly patients there is an absence of loudness recruitment indicating the likelihood of complicating involvement beyond the chchlea.

Tests for Tone Decay. Goetzinger, et al. (1969), in an extensive investigation of auditory response in presbycusis, found virtually no correlation between the existence of presbycusis and tone decay. Decay varied from 0 to 5 dB for frequencies of 500 through 2KHz for individuals with normal functioning cochlea or mild sensory-neural hearing loss. Hinchcliffe (1962) states that in reviewing data regarding decreased hearing and tone decay, VIII nerve and cochlear degeneration are not the dominant factors in developing presbycusis.

Jerger (1960), used Bekesy audiometry (see Chapter___) with patients having various types of hearing impairment. There were 44 elderly persons labeled as presbycusics. The presbycusic subjects had more Type I than Type II tracings with two subjects demonstrating Type IV's. Three subjects gave responses that did not fit any of the four patterns. Since Type I tracings generally indicate a normal auditory mechanism or conductive impairment, Type II patterns a cochlear problem and Type IV tracings a retrocochlear disorder, then presbycusis does not appear to fall into a definite category. It appears that significant tone decay is not a predominant factor in presbycusis.

The SISI Test. Site of lesion testing through the use of the Short Increment Sensitivity Index (SISI) was conducted as part of a classic investigation by Jerger, et al. (1959). As in the case of other special tests, the performance of the elderly on the SISI test are quite unpredictable. Presbycusic subjects do not fit into any definite category.

Although studies of the central auditory mechanism (the brain stem pathways and auditory cortex) are scarce, nevertheless they provide important information about presbycusis.

Degraded Speech. Jerger (1973) studied the response of eighteen elderly subjects to a variety of suprathreshold tasks involving speech understanding in difficult listening conditions. Five younger subjects demonstrating sensory-neural hearing loss were assessed under the same conditions as controls. All hearing impaired subjects revealed the same degree and configuration of sensory-neural hearing loss. Five normally hearing subjects were also exposed to all experimental conditions. Suprathreshold tasks included: (1) PB max; (2) PB score at a 5 dB SL; (3) sentences in competition (see Chapter ___); and (4) time-compressed sentences. Average scores for all three groups are shown in Figure 6. Jerger presents his conclusions as follows:

> We see that, for the relatively easy task of repeating back PB words at a level well above threshold (PB max), there is little difference among the three groups. When the task is made somewhat more difficult, however, by simply presenting the words at a very faint level (5dB SL), the presbycusic group has more difficulty than either the normal or the control groups. Sentence identification in the presence of ipsilateral competing message (SSI-ICM) shows an even more pronounced effect. Controls break down relative to normals, but presbycusics show an even greater loss.
>
> Finally, subjecting the SSI sentences to time compression accentuates the effect even more. Both the control and presbycusic groups show a severe breakdown in comparison with the normal group. . . . Presbycusics show a slightly greater effect than the younger controls (pp. 121-122).

Jerger concludes that among the elderly there is a disproportionate breakdown in understanding speech when compared to their pure-tone threshold.

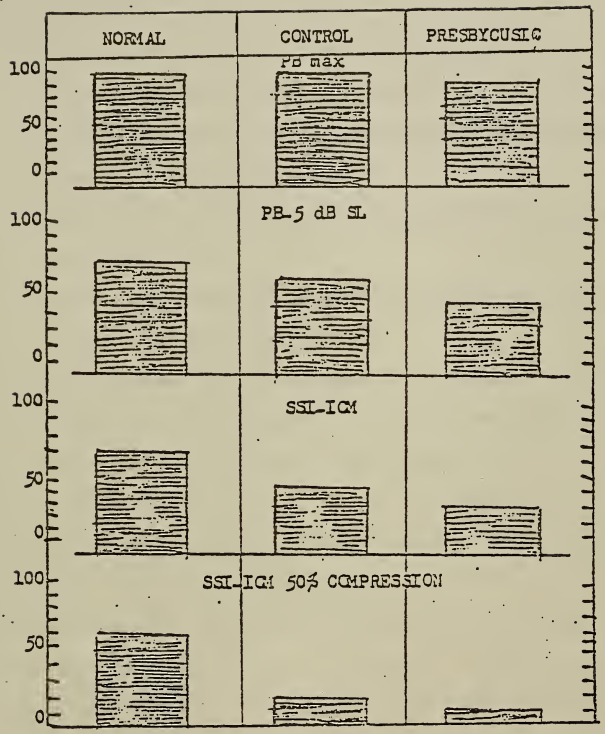


Fig. 6. Average scores on 4 speech understanding tasks for three patient groups. Adapted from Jerger, J. Adv. Oto-Rhino-Laryng., 20, 115-124, 1973.

In summarizing the literature, the following is revealed:

1. Typically there is a bilateral hearing loss by air and bone conduction. The general configuration is sensory-neural in appearance, sloping gently into the high frequencies.
2. The effects of noise and ototoxic drugs cannot be separated well from true presbycusis.
3. Speech understanding is generally worse than one would expect from observing the pure-tone audiogram.
4. Site of lesion tests are inconsistent from person to person; however, recruitment is seldom seen in presbycusis whether measured by traditional means or by acoustic reflex measurements.
5. Tests of higher auditory function show noticeable differences when the presbycusic client is compared with a younger individual with equal sensory-neural hearing loss.
6. Since elderly patients have considerably more difficulty in understanding verbal messages than would be suggested by their pure-tone thresholds or performance on other site of lesion tests, then one must conclude that the problem involves primarily the higher auditory centers.

Discussion

Presbycusis appears to be a disorder of central processing that is compounded by peripheral sensory-neural hearing loss. The amount of hearing loss noted in the elderly would not present itself as an overwhelming disorder to a younger person, but the elderly person has a great auditory disability. For example, a decrease in the speed of processing auditory/linguistic symbols at higher auditory centers would compound the peripheral auditory difficulties of the elderly client. Problems in sorting auditory information, i.e., separating

a structured set of phonemic symbols from background noise would also prove difficult.

The devastation encountered by the elderly client who can hear what people are saying but cannot make any sense of it must be overwhelming. For individuals who once were able to hear at church, able to communicate around a large dinner table, talk to their grandchildren, go to a movie, watch television, listen to the radio, go to social gatherings, or understand the words to music, the effect is dehumanizing. The individual is no longer able to participate in social activities and gradually eases himself out, or is eased out, of meaningful contact with the world around him. Self-isolation, depression, and withdrawal from family and society are the common consequences of severe auditory dysfunction in the elderly.

The Role of the Audiologist in Dealing with the Elderly

Although elderly clients make up a great percentage of the audiologist's case load, the complexity of their auditory difficulties have caused many audiologists to avoid the challenge. Busse (1960) has stated that audiologists have realized that phonemic regression and related disorders in the elderly present a formidable problem in diagnosing and treating, not to mention the interference and frustration felt by the elderly person. Aging clients do not understand why they cannot make sense out of what they hear, nor do they understand why someone cannot provide them with the tools to make use out of what they receive auditorily. According to Rossenwasser (1964), the adult over age 65 years faces a greater handicap with equal hearing impairment because of the complex psychological problems common to the aged and the adjustments he must make to his environment. In order to avoid the difficulties of working with the elderly client, it is easy for the audiologist to dismiss his responsibility with, "Your ears have grown older," or

"Your ears are old, and there is nothing medically that can be done for you." This eliminates the possibility that the individual will receive rehabilitative services which could benefit him.

The audiologist is the proper professional for the elderly to discuss the impact of their hearing impairment as it affects them communicatively, socially, and occupationally. It is easy for the alert elderly person to realize his severe limitations when the auditory confusions cause him to miss parts of messages, and therefore respond inappropriately when this occurs frequently enough; it not only alarms him but concerns his family and other associates as well. These are unfortunate experiences for the elderly person who is feeling less than useful anyway, and who is not as active as he feels capable of being. They will, in most instances, cause embarrassment and anger. If these situations occur frequently enough, the elderly person may retire into self-exile to maintain his pride and avoid further embarrassment.

Audiologists have a responsibility to help the presbycusic patient as they would any other patient who is in need of their help. This might be in the form of diagnosis, counseling, or rehabilitation. The elderly individual generally comes to the audiologist out of desperation. Of any other handicapping condition related to aging, the inability to communicate with family and friends must be the most devastating. If the elderly individual is confronted by an audiologist who turns him away because "there is nothing that can be done," then that audiologist may have pushed him sharply in the direction of isolation. We are finding that many of the elderly with presbycusis who were thought to be beyond rehabilitation can be helped to communicate more efficiently (Hull, 1975). Many can learn to communicate at least to the point of being able to relate more efficiently with their family. The specific techniques for the management or rehabilitation of this population will be presented in Chapter ____. The skilled diagnostic

evaluation is the first step toward successful rehabilitation of the elderly client. Together with skilled diagnosis, an understanding of the devastating effects of presbycusis on the aging individual is necessary. Without that understanding, a complete diagnosis will not occur. An audiologist who does not understand or who does not have a real desire to deal with the elderly person will be doing a disservice to those clients by going through the motions of evaluation only to dismiss his rehabilitative responsibility.

Audiologic Assessment of the Elderly

The successful audiologic evaluation is the first step toward successful rehabilitation of the elderly. When evaluating the hearing of the aged person, the audiologist is dealing with someone who probably heard and understood well at one time. For reasons unknown to him, his hearing gradually decreased until he was concerned enough to seek the aid of an audiologist who might help him or at least give him counsel.

According to Alpiner (1965), the elderly person might complain that he cannot "understand" people as well as he used to. Or, he might state that he feels that his family and friends are mumbling lately, but that he is afraid that it might be because he is not hearing as well as he should. He might say that he feels that he is able to hear all right, but that he has difficulty "making out" what people say. One frequent comment is that he can hear well when he is talking to one or two persons, but as soon as he must communicate with a group of people, he has difficulty understanding what is being said to him. Because he does have difficulty understanding what people say, he will often confuse the content of messages. If he also has typical high frequency hearing loss, the difficulty in understanding speech is compounded. He may hear messages incorrectly, and thus, answer inappropriately. Some family members, friends, and especially those

unfamiliar to the individual, may then diagnose senility in the geriatric. This diagnosis may be inaccurate since senility has been confused with inability to understand auditory messages. The case history may reveal nothing except the fact that the person being evaluated has grown older.

The tests utilized during the audiologic evaluation and the manner in which they are administered is dependent upon the particular client being evaluated and his/her individual temperament. Such factors as fatigue, frustration tolerance, along with the motivation of the individual are necessarily taken into consideration when assessment techniques are chosen. Alpiner (1965) suggests that it is oftentimes best if the testing period can be extended to two separate sessions on different days. Because of the transportation difficulties for many elderly individuals, however, as much information should be derived during the first assessment period as possible. It may not be possible to do the complete hearing aid evaluation during the first visit.

Depending upon the physical capabilities of the elderly client, the following tests should be considered in whatever modified form the audiologist deems necessary for the purpose of acquiring needed information for either medical referral or rehabilitative efforts:

1. Pure-tone air conduction thresholds.
2. Pure-tone bone conduction thresholds.
3. Speech reception thresholds under phones with and without visual clues.
4. Auditory discrimination under phones with and without visual clues for:
   a. Phonetically balanced monosyllabic words; and
   b. Sentences (C.I.D. Everyday Speech).
5. Impedance audiometry including acoustic reflex measurements for determining the presence of recruitment.

The Case History

Prior to the audiometric evaluation, case history information should be taken. Since, in most cases, such items as those referring to childhood illness are not pertinent to the elderly individual, modifications may be desirable. Information regarding the handicap they experience in various communication situations is important, as is the approximate time of onset of the hearing loss itself and the onset of its handicapping effects. A sample of an extension of the traditional case history form utilized at the University of Northern Colorado Audiology Clinic specifically for elderly clients is seen in Figure 7.

Skillful interviewing techniques are necessary when dealing with many elderly clients. The question, "When did you first begin to notice that your hearing was not as good as it should be?" can bring about a lengthy discussion on the part of the elderly individual beginning with information regarding childhood experiences or an oration on the topic of the lack of clarity of speaking habits by young people today. The skillful clinician will be able to guide the elderly client into specific topics related to not only the onset of the hearing loss but specific difficulties experienced in various communication situations. The audiologist must take the time necessary to listen to the elderly client. In many instances, the information being given by the client has been told to no one else, for example, the client's concerns in making sense out of conversations or understanding what his grandchildren are saying. The resolution "not to be a bother by asking their friends or relatives to repeat what they said so Grandma can be a part of the conversation" was undoubtedly a traumatic one and needs airing. Tears will often be shed by the elderly client during the case history interview. The audiologist should listen well but also guide the conversation toward pertinent topics. Most importantly, however, the audiologist must listen and learn about

AURAL REHABILITATION EVALUATION FORM

Date_____

Name_____ Age_____ Sex_____

Present occupation_____ Previous occupation_____

Reason for seeking audiometric assessment_____

_____

Does the utilization of visual clues help you understand what people are saying?

_____

Do you think learning to use visual clues will help you?_____

In what way/ways?_____

How do you compensate in difficult conversation situations?_____

_____

Please indicate the situations in which you communicate best and those which give you the most difficulty:

	No Problem	Problem
Socially.	_____	_____
Dinner Table.	_____	_____
Telephone	_____	_____
In the Home	_____	_____
With Males.	_____	_____
With Females.	_____	_____
With Children	_____	_____
Groups.	_____	_____
Individuals	_____	_____
At Work	_____	_____
Other (Please Indicate)	_____	_____

_____

Fig.7 . Extension of standard case history form adapted for the elderly client and utilized in the Audiology Clinic, University of Northern Colorado.

that client, not only about the auditory impairment and the resulting handicap, but also his/her desire for work toward rehabilitation.

Pure-Tone Evaluation

After the case history interview is completed, the audiologic evaluation is initiated to determine the type and extent of the auditory impairment. Instructions for all auditory tests must be explicit. On occasion, directions must necessarily be given several different ways until the individual understands them. Patience on the part of the audiologist is the key here. The concept of responding by raising one's hand or pushing a button whenever a barely audible signal is heard is a difficult concept for many elderly persons. They will often wait until the pure-tone signal is comfortably loud and then nod their head to acknowledge its presence and also raise their hand or sometimes not raise their hand. When the audiologist asks the client if the tone was heard, he/she will state confidently that it was. Careful instructions regarding correct response along with the purpose of the test are then given once more. If a manual response is requested by the audiologist, the reaction time by the elderly must be kept in mind. The elderly person will often respond more slowly than the younger individual simply because age has slowed voluntary motor response. On occasion, manual response (raising the hand or pushing a response button) will come several seconds after the pure-tone signal is presented. The audiologist must wait for such a delayed response before presenting the next signal at a higher intensity or what seems to be a response to the more intense signal may actually be a delayed response to the previous one, thus not only confusing the client but also resulting in false information regarding that person's sensitivity for pure-tones.

A verbal response is utilized through the Community-wide Program in Geriatric Aural Rehabilitation (Hull, et al., 1975, and Traynor, 1972). Verbal response by

the elderly client has been found to be an effective technique for those clients who either have difficulties grasping the concept of a manual response to a barely audible pure-tone signal or have very delayed responses. The elderly person will often converse regarding the intensity of the signal during the evaluation period. The verbal response procedure capitalizes on the client's natural inclination to speak to the audiologist. The signal is presented, for example, at 60 dB. If the client does not respond, the intensity is increased by 10 dB and the client is asked once again if the signal was heard. If at that point the response is positive, the intensity is decreased by 5 dB. As the audiologist nears the client's threshold, the usual response is a verbal one, that the signal is "very faint," or "very weak," or is "very far away." Thresholds for frequencies of 250, 500, 1 K, 2 K, 4 K and 8KHz are thus established utilizing that procedure. Reliable responses are generally found utilizing that procedure, resulting in less confusion on the part of the client and less frustration on the part of the audiologist. Much positive reinforcement is used throughout the evaluation.

Evaluation of Speech Reception

Procedures for speech audiometry are generally less confusing for the elderly client. For speech audiometry as in pure-tone audiometry, the audiologist must learn patience if it does not come as an innate quality. During assessment of the speech reception threshold, the audiologist must give explicit instructions such as, "You will hear some words such as baseball, hotdog, and airplane. I would like for you to repeat them after me. Some may be very soft but try to tell me what they are the best you can." On occasion, the elderly client will describe the relative intensity of the word rather than repeat it. Such responses may be, "That was very soft," or "Turn it down, it is too loud," or "Yes, I can hear you." This may be a carry-over from the verbal response utilized for pure-tone audiometry.

If this does occur, ask the client if they can hear your voice; if they say, "Yes," then ask, "Can you understand me?" If the response is, "Yes, I can," then repeat the instructions and allow the client to practice on several of the words before continuing the test.

A point should be stressed here. When instructions for all test procedures are given, remove the client's head phones and face him. Ask the client if he can hear and understand you and then proceed with the instructions. The audiologist, then, avoids the confusions that can arise from auditory discrimination difficulties when visual clues cannot be utlized by the client.

After speech reception thresholds are obtained, the test is repeated with the client able to see the audiologist's face. This procedure is utilized to determine how the client is able to utilize visual clues.

Evaluation for Speech Discrimination

Assessment for auditory discrimination may be conducted utilizing lists of both monosyllabic phonetically balanced words and sentences (C.I.D. Everyday Speech) with and without visual clues. For either type of assessment, the audiologist is warned against placing the client in an inevitable situation of failure. If, for example, the client is obviously unable to receive and respond to any stimulus item, the client's frustration can spell disaster for future rehabilitative efforts or other professional contacts if the audiologist continues on through the lists of words or sentences blindly ignoring that frustration. If the client appears unable to respond to any test item and is quickly arriving to the point of extreme frustration, the audiologist may ask the client to face him to test the client's ability to utilize visual clues for the same monosyllabic words or sentences. If the client is more successful with this mode of presentation, then frustration is lowered and some very valuable information can be obtained for future rehabilitative efforts.

Impedance Audiometry

Impedance audiometry appears to be an efficient tool for assessment of peripheral auditory function to rule out the existence of conductive impairment when air conduction thresholds indicate hearing loss. Traynor (1975) studied the efficiency of impedance audiometry in assessing the non-ambulatory elderly person when compared with traditional air and bone conduction tests, conducted both in a sound-treated environment and in the non-sound-treated health care facility. Results of that investigation indicated the following:

1. There is a significant difference in thresholds when pure-tone air and bone conduction are assessed in a non-sound-treated environment as compared to pure-tone air conduction evaluations in a sound-treated environment. However, bone conduction is affected more than air conduction. These data suggest that air conduction could be evaluated outside of a sound-treated room with reasonable accuracy.
2. Prediction of the type and extent of hearing loss was better using pure-tone air conduction audiometry and acoustic impedance measurements than by traditional air and bone conduction audiometry conducted in a sound-treated environment.
3. The average amount of time required to administer air and bone conduction tests versus air conduction and impedance measurements was essentially the same.

From these results, several conclusions seem reasonable:

a. Air conduction evaluations can be conducted outside of a sound-treated environment with reasonable accuracy in the elderly population.
b. Bone conduction evaluations should not be conducted outside of a sound-treated environment.
c. A skilled clinician can obtain accurate conclusions from pure-tone air conduction and electro-acoustic impedance testing in a

non-sound-treated environment. This includes whether there is a hearing loss, the degree of loss, and the type even in a non-ambulatory geriatric population.

Conclusions

Beyond the Audiogram. Accurate evaluation of auditory function of the elderly client requires a skilled and adaptable audiologist, who has considerable patience. The rapport established with the older individual plays a large part in the success of the entire diagnostic and rehabilitative effort. If the elderly client views a younger audiologist as "flippant," or "arrogant," or "intolerant" of his elders, then it is very difficult to salvage any type of professional relationship. On occasion, those feelings by the client can arise simply by the general appearance of the audiologist or a side comment that was not understood by the elderly person. All comments and all communication about the elderly client should be made directly to the client and not to a family member, privately. The suspicious nature oftentimes seen in the hearing impaired elderly person may be simply a defense mechanism to help him cope in an uncertain environment. To avoid complications of this nature, the client must be involved in all verbalization regarding the results of the evaluation and should be made to feel free to ask questions. The environment should be a good one for open communication between the audiologist and the client; relaxed, but professional in climate. The audiologist must develop a feeling of trust between himself and the client. Without it the diagnostic evaluation and aural rehabilitation program may be doomed.

The audiologist must be able to look beyond the audiogram and the anatomic pathology of presbycusis when dealing with the elderly person. The audiologist should have a clear understanding of the handicapping effects of presbycusis on communicative function in the "real world" outside of the audiology clinic. The audiologist should try to understand the desperation of the elderly individual and what it must mean to see one's communicative skills dwindle in the face of

manditory retirement, low income, and decreasing physical capabilities. Gradually the one avenue of contact with his world (hearing/communication) is degenerating. In conducting the audiometric evaluation, the hearing aid evaluation, and in initiating and maintaining that individual's aural rehabilitation program, the audiologist must look to the handicapping effects of presbycusis on the elderly person and the individual's concerns and goals. The goal of the audiologist should be to work toward guiding the elderly toward the tools which will allow for an understanding of their auditory impairment and its most efficient use in communication.

For information regarding the specific aural rehabilitation processes for the elderly including the hearing aid evaluation, counseling techniques, and utilization of speechreading auditory training techniques, see Chapter ____ of this text.

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Management of the Hearing Impaired

THE ELDERLY CLIENT

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Introduction

The boundaries of age as they relate to the term "aged" are ever changing due to the marvelous advances of medicine and related health maintenance. It is now becoming common place for individuals to live to great ages that were thought of as impossible even thirty or forty years ago. Although the boundaries of life expectancy continue to expand, the effects of the aging process on the sensory capabilities of man have not been altered appreciably. As persons in our society are allowed to live to a greater age, we must now look toward the maintenance and enhancement of those capabilities for most efficient use during their additional years.

One of the most devastating sensory deficits which accompanies the aging process is the deterioration of auditory function, or presbycusis. The inability to communicate in an efficient manner is, perhaps, the greatest detriment to many elderly individual's attempts at coping with a vital and changing world.

As stated in Chapter ___ of this text, presbycusis is a neurologic reality and is associated with many other physical changes seen in the aged person. Every individual, however, is different relative to his or her physical time-table for aging and each is different in regards to the effects of aging, socially and economically. The elderly individual who is devastated because he cannot understand what people are saying and is embarrassed by the confusions he must cope with in his interpretation of auditory-verbal messages may feel even greater despair when he finds that others his equal in years are experiencing little difficulty. He may feel as though "he is losing his mind" when the information he derived from instructions on how to get to the "Lake Shore Picnic Grounds" for the Senior Citizens' Club outing took him to another park miles from the correct site where he waited patiently for the others to arrive until finally leaving, an angry and

ejected man. He is angry not only at himself for apparently not understanding the lrections but also at his whole current life situation. He has been embarrassed before ıen messages became confused. He wonders what is happening to him that these situations re occurring with some regularity. He knows that he can hear people talk, but he is aving difficulty "making sense out of it." It is not difficult for an otherwise alert lderly person to reason that the confusions are, of course, a result of growing older, ut of most concern are the frightening thoughts that maybe he is indeed, losing his mind, r that senility is becoming a reality. Since others are known who have hearing diffi-ulties, the conclusion is generally reached that it may be an auditory problem. They ave seen older persons who wear hearing aids, but a hearing aid is often referred to ıong their friends as the final sign that a person has grown "old." They know, too, ıat many who have worn hearing aids have found little help from them.

How does the audiologist help this person? The devastation of presbycusis is, ı many cases, the last straw toward the finality of aging for the elderly individual. ıe elderly client is, likewise, one of the most difficult to deal with. The general rustrations involved in growing old, the lack of financial independence, the steady ecline of physical capabilities, the resignation to confinement, and the final withdrawal rom the communicating social and financial world makes this client one of the audiolo-ist's greatest challenges. The rehabilitative audiologist must accept that challenge f he/she is going to work with the elderly client in an effective manner toward rehabili-ion. Many elderly clients with presbycusis can be rehabilitated. The audiologist must, ost importantly, accept that fact before initiating work with any hearing impaired aged erson.

The basic philosophy underlying the information hereby presented is not new to our ield. Other individuals have recognized for some time that any rehabilitative effort in ealing with the elderly hearing impaired client must be as unique and comprehensive as

he hearing impairment itself (Alpiner, 1968; Barr, 1970; Pang and Fujikawa, 1969; arker, 1969; Willeford, 1971). The concepts presented in this chapter are, likewise, ot complete nor final for all clients. The audiologist working with the geriatric lient must be as innovative as he or she is competent. Each elderly person is, indeed, ifferent, with differing physiological and psychological problems accompanying the auditory eficit. The information presented here should be read with that fact in mind and odifications made for individual clients.

he Beginnings of Rehabilitation

The Hearing Aid Evaluation.--Many elderly have rejected the idea of wearing a earing aid long before arriving at the Audiologist's Clinic. They have come, perhaps, ecause their children have requested that they at least try one, or a wife, for example, as reached her limits of tolerance in an apparent inability to communicate with her usband and has demanded that he be evaluated to determine if a hearing aid will help. e can assume, however, that the elderly person who has consented to come for the hearing id evaluation hopes that a hearing aid will allow for more efficient communication with others. Many come with the hope that something will be discovered within their uditory dysfunction that can be helped medically.

Before arriving at the audiologist's clinic, many elderly persons' only association ith, or knowledge of, persons who conduct diagnostic evaluations and deal with hearing ids has been through a hearing aid dealer. The audiologist must convince the elderly lient that he/she is the professional in regards to assessment of hearing and the abilitation or rehabilitation of those with hearing impairment. It is occasionally ifficult to convince the aged person that your sole purpose is not to sell hearing aids.

Attempts at an effective hearing aid evaluation with an elderly hearing impaired lient can be extremely challenging but occasionally frustrating. The audiologist must emember that he is dealing with an individual who has probably heard normally at one ime, probably lead a relatively normal social life, may have been the supporter of the

amily, and had at least several good friends. The elderly person has probably now etired, is living on a fixed smaller income, has few good friends who are now living, s having extreme difficulty communicating with his family because of decreased auditory unction, and is frustrated and angered at the whole process and devastation of becoming lder. His feelings of desperation may be well concealed but still evident. Again, the udiologist, probably a much younger person than the client, must gain the respect of he elderly person. If the younger audiologist is interpreted by the elderly client as flippant, arrogant, or intolerant of his elders," much success in rehabilitation efforts hrough good rapport may be lost. The elderly client's frustration at an inability to ommunicate along with many and sundry physical discomforts may cause him to appear rritated or intolerant of the evaluative session. The elderly client may deny his apparnt auditory difficulties and need for amplification by removing the blame from himself nd placing it, for example, on the "younger generation" who do not speak clearly. People seem to mumble now-a-days," is a common statement by the elderly client.

The procedures utilized during the hearing aid evaluation will vary with the ndividual client. It is important to seriously consider the apparent tolerance of the lderly client to the evaluation procedures. They may necessarily have to be modified o compensate for his/her physical limitations, potential fatigue, and/or emotional ntolerance of the testing situation. Within these confines, however, the following rocedures have been found to be beneficial:

1. Initial test battery:
   a. Pure-tone air and bone conduction,
   b. Speech reception thresholds under phones, and
   c. Assessment of auditory discrimination under phones for phonetically balanced words and sentences (C.I.D. Everyday Speech).
2. An extensive discussion regarding the preliminary results of the tests in regards to the handicap of hearing impairment.

3. Referral to an appropriate physician. Whether or not the individual appears to be one who would benefit from amplification, referral to an appropriate physician for otologic clearance is appropriate and necessary, with a commitment from him/her that referral of the client back to you, the audiologist, is expected.

4. The hearing aid evaluation:

   a. Discussion regarding hearing aids, their advantages, their disadvantages, and the fact that you, the audiologist, would like to try different types of hearing aids on him/her to see if you and the client feel that amplification would be of benefit,

   b. Conduction of a free field speech reception threshold,

   c. Free field auditory discrimination utilizing phonetically balanced words and sentences (C.I.D. Everyday Speech),

   d. Free field speech reception thresholds with one or two representative post-auricle and one or two body-type aids, all carefully selected by the audiologist in terms of the degree and extent of the client's hearing loss,

   e. Free field auditory discrimination assessment utilizing phonetically-balanced words and sentences (C.I.D. Everyday Speech) with the same hearing aids,

   f. If the preliminary results appear to indicate that amplifcation would benefit that person, then instruction regarding the function of the hearing aids utilized during the evaluation including how to change batteries and other intricacies should take place at that time (preferably with a family member present to also hear the instructions). The client is then sent home with one selected post-auricle and one body-type hearing aid utilized during the evaluation to compare and try them for at least one week to further determine their representative effectiveness in his/her everyday

life. Specific instructions regarding adjustments required for the use of the hearing aid and specific environments for trial should be made. A few suggested environments for trial of the hearing aids may include: (1) while watching television, (2) at church, (3) at any social gathering where the elderly person would feel comfortable wearing them, and (5) while at a restaurant.

The client should be cautioned to only wear the hearing aid if he/she desires to wear it. Emphasize that it is not mandatory to wear one in all environments suggested but stress the desirability of trying them in as many situations as possible. Set an appointment for the client to return in one week. During the return visit, the client will be ready for extensive discussion regarding the benefits of amplification as it applies to him and not the generalities that were discussed during the initial evaluation the week prior.

In discussing the utilization of hearing aids with the elderly client and in selecting trial aids for consideration and/or purchase, the following should be strongly considered:

1. The Auditory Capabilities of the Client.--More and more we are finding that many elderly persons cannot utilize amplification well enough to warrant their being fitted with a hearing aid. Even though the pure-tone configuration may indicate good prognosis for the use of amplification, auditory discrimination problems along with apparent central auditory processing dysfunction may contraindicate its use. The frustration of being able to hear speech more loudly, but still experiencing an inability to "understand" what is being said, may make communication even more difficult than being without a hearing aid. The amplification of environmental noise and an elderly client's inability to separate noise from a primary signal may also cause unnecessary anxiety and frustration.

   Some elderly persons have purchased numbers of hearing aids from various hearing dealers in hopes that one of them will successfully allow for more

efficient communication, only to find, after spending large sums of money, that none of them provide sufficient benefit, and none of them are worn. "The dresser drawer syndrome" (Alpiner, 1974) is testimony to the caution that should surround the hearing aid evaluation of the elderly person. The audiologist must look carefully at the auditory capabilities of the aged client--not so much at the fact that hearing loss is present, but at whether a hearing aid will allow for more efficient auditory function. For some ages of difficult clients, the hearing aid can be viewed as providing benefits that are at least better than nothing at all. For many elderly clients, however, the frustrations resulting from the inappropriate hearing aid, or in some cases any hearing aid, can be interpreted as worse than nothing at all.

2. The Physical Capabilities of the Client.--The physical capabilities of the client relative to manual dexterity is an important consideration in regards to the type and size of the hearing aid. The elderly individual who is fitted with a small post-auricle hearing aid whose less than nimble fingers cannot manipulate the gain control, let alone a small telephone switch, will experience great frustration in attempting to wear the aid and in many instances will cease wearing it altogether. Many elderly persons have great difficulty placing the small battery, necessary for use in post-auricle and all-in-the-ear hearing aids, in the battery compartment. If the individual is unlucky enough to drop the battery, those with visual difficulties will often not be able to find it. Lost within the carpet, it is doomed to be devoured and lost forever deep within the bowels of the vacuum sweeper.

Body-type hearing aids generally not only allow for easier manipulation of the controls but also cause fewer problems related to battery size. Convincing the elderly client to accept the larger body-type aid is, however,

another matter. Acceptance of the need for amplification and the wearing of a hearing aid per se is often times difficult for this age of client. The thought of using a large hearing aid is generally even more difficult to accept. The importance of comparing the smaller, generally more physically desirable hearing aid, with the larger body-type aid is important during both the clinical and home trials. Once the elderly client determines that the ease of manipulation of the controls of the body-type aid, along with its acoustical characteristics outweigh its disadvantages of size and wearability, counseling toward its use is facilitated. This is not to say, however, that all elderly persons should be counseled toward the use of body-type hearing aids. They are generally more beneficial for those with limited manual dexterity or visual problems or those who require the additional gain that those aids allow for. Many active elderly persons can utilize smaller aids (post-auricle or all-in-the ear). If one does appear to benefit the client, then of course it should be considered. Some recently developed body-type aids with rechargeable batteries are excellent for use by the less dexterous elderly person not only for use as a hearing aid for everyday use but also as an auditory trainer during rehabilitative therapy.

Hearing Aid Follow-up.--It is imperative that the hearing impaired elderly person e involved in a vital aural rehabilitation program throughout the hearing aid evaluatio nd after the formal evaluation period is completed. If a hearing aid, is, indeed, ecommended, the client should be encouraged to wear it during speechreading sessions. hether the client is wearing a trial aid or the aid he/she has purchased, counseling oward its use, discussions regarding the benefits and limitations of hearing aids, nd suggestions for its use in the everyday world can continue. This type of follow-up ill greatly enhance the client's success in adapting to the use of amplification.

If it is found that the client cannot effectively utilize a hearing aid, then the ternatives of speechreading/auditory training must still be employed without the use amplification.

Effective hearing aid evaluation procedures as a part of a total aural rehabilitaon program for the elderly residing in the retirement home or in the community has en found to "virtually eliminate the problem of hearing aid dealers using the nurs- g home to simply sell hearing aids" (Hull, et al, 1975). The residents are therefore otected from high pressure sales practices and inappropriate fittings.

e Rehabilitation Process

Counseling the Elderly Client.--Whether or not the client can benefit from plification, his emotional acceptance of his auditory impairment and ultimate desire r more efficient auditory function must be of primary concern to the audiologist. If e client does not appear to be able to emotionally cope with his auditory dysfunction d/or does not appear to desire exploration of possibilities for rehabilitation, then it the responsibility of the audiologist to intervene as a counselor. The audiologist n show empathy as the elderly client describes his/her inability to understand what ners are saying at church, at social gatherings, at Thanksgiving dinner, or while opping and the devastation he feels. The elderly client does not want sympathy from e counseling audiologist. The younger audiologist who says, "I know how you feel," en the elderly client describes the frustrations experienced in his inability to mmunicate with family and friends, can expect to hear the client justifiably reply, ou do not know how I feel. You are not my age and are not experiencing my difficulties communication." The audiologist must, however, be able to relate to what the elderly rson is saying through his knowledge of presbycusis and experiences in working with her elderly persons. The aged client may be envious of the younger age of the diologist and wonder how an individual who is so much his junior can possess the

nowledge and understanding of his particular problem that will, in turn, allow the udiologist to help him. The skilled rehabilitative audiologist should be able to vercome the barriers of age and deal with the specific auditory and related problems f the aged client through proper rapport. The client must be made to realize that the udiologist is there to listen and to discuss the problems which surround that particular lient's auditory difficulties as they affect him. The audiologist's purpose should be o help the client learn to function more efficiently with his/her auditory difficulties nrough effective counseling and through specific speechreading/auditory training.

Motivation toward participation in aural rehabilitation programs will occur only nen the elderly client knows that the audiologist understands his auditory problems, oncerns, and frustrations, and, most importantly, still feels that he can be helped to ommunicate more efficiently. Motivation for some clients is more difficult to develop nd maintain, especially when it concerns participation in aural rehabilitation efforts nich can be difficult and sometimes only slightly rewarding from session to session.

Group Involvement.--Group counseling can be most effective. The empathy and omradery which often develops among groups of hearing impaired elderly clients who ealize, many for the first time, that the others in the group have experienced the ame or similar frustrations and problems relative to communication, can be very ewarding. Extremely effective counseling can result from such group catharsis. Until ne elderly client realizes that his auditorily-based problems are not common only to lm, but also to others who are viable, living elderly individuals, then effective ural rehabilitation can be difficult to initiate and maintain. These group techniques an work well both in the retirement center environment and for well elderly persons n the community.

Peer Involvement.--Peer group pressure can be an effective motivational technique or the elderly client toward developing a desire for attempts at aural rehabilitation. ther elderly clients who have experienced success through aural rehabilitation programs

provide great encouragement to hearing impaired aged clients who may be reluctant participate. For those elderly who may express a seeming lack of desire to partici-e in aural rehabilitation because of his/her age or the common excuse that these forts should be concentrated toward the younger person, then peer group pressure from ner elderly persons who would like to communicate with (talk to and be understood by) potential client, can work wonders.

Family Involvement.--It should be required that the elderly client's family be volved in counseling regarding his/her auditory difficulties, but this is frequently possible. The elderly person who is placed in a retirement home because his son daughter-in-law, for example, do not have the time to provide a meaningful home vironment for him often times indicate that they do not "have the time" to visit him participate in such counseling activities. It is interesting to note, however, that of the frequently stated reasons for placing the aged family member in the retire-nt home is that they "cannot talk to him anymore," or "he gets confused when they lk to him," or "he gets confused when they give him instructions for things to do." ey report resulting anger on the part of their elderly family member and, in turn, ger and frustration on their part. They report that "Grandpa is getting confused." term "confused" frequently begins to take on the connotation of "senility" in their nds, and he is placed in the retirement home so that he can be "looked after more efully" or will be "more comfortable." Now the elderly person is further devastated, ing taken from his home and family and placed in a strange environment which he feels terminal placement for him. No matter how nice the retirement home is, how good the als, how stimulating the activities, it is not "home" to him and it never will be. resulting depression that occurs can sometimes be fatal. If there is little or involvement with the family from that time forth, the stay in the retirement home n be very devastating.

Effective aural rehabilitation, then, not only involves the hearing impaired elderly client but also his/her family, i.e., a son or daughter who lives in the vicinity, their husband or wife, and, of critical importance, their grandchildren. It is important that family counseling be conducted prior to the elderly person's placement in the retirement home since there is a possibility that such placement may be contraindicated. If, on the other hand, the elderly hearing impaired client is first seen and evaluated after placement in the retirement home, then the family should be contacted as one of the initial steps in that client's aural rehabilitation program.

The following are suggested topics for discussion during the rehabilitative audiologist's meeting with family members:

1. What is presbycusis?
    a. How does it affect the elderly person's ability to communicate?
    b. The resulting frustrations on the part of the elderly person and those with whom he/she attempts to communicate.
2. Hearing aids.
    a. Why some elderly cannot utilize amplification on a day-to-day basis even though they appear to be hearing impaired.
    b. The benefits of amplification as part of a total aural rehabilitation program.
    c. How the hearing aid works.
3. How to more efficiently communicate with their hearing impaired family member.
    a. Speak at a slightly greater than normal intensity.
    b. Speak at a normal rate but not too rapidly.
    c. Do not speak to the elderly client at a greater distance than six feet but no less than three feet.
    d. Concentrate light on the speaker's face for greater visibility of lip movements, facial expression, and gestures.

e. Do not speak to the elderly person unless you are visible to him/her, i.e., not from another room while he/she is reading the newspaper or watching TV.

f. Do not force the elderly person to attempt to understand you when there is a great deal of environmental noise within the listening area. That type of environment can be difficult for a younger normally hearing person, let alone an elderly individual with presbycusis.

If an elderly person's ability to communicate with his/her family can be even partially enhanced, then a giant step toward other successes in aural rehabilitative efforts can be made.

Speechreading/Auditory Training

The approach to speechreading instruction recommended for use with the elderly client is by no means a traditional one. No matter how motivated the elderly client is toward learning to make more efficient use of his/her residual hearing through speechreading instruction, that motivation will quickly fade if traditional analytic approaches of phoneme and word recognition are utilized to any extent. Analytical instruction regarding phoneme recognition in isolation and in the context of syllables and words is extremely difficult for young hearing impaired cleints, and even then those types of speechreading approaches must be questioned as to their real effectiveness. Assuming that the elderly clients involved in speechreading instruction possess normal or near normal language function, more meaningful approaches for the enhancement of their ability to receive and interpret verbal/auditory messages can be utilized.

The use of residual hearing should be stressed. If the elderly client can make use of a hearing aid, then it should be worn during speechreading sessions. If a hearing aid is not utilized by individual clients on a routine basis because they have not been able to make good use of amplification for whatever reason, then a hearing

d is not advised during speechreading instruction, although voice should be used by e clinician. Therefore, all clients are forced to use their residual hearing. If individual client appears to have the auditory capacity to wear a hearing aid but r some reason is having difficulty adjusting to its use, then speechreading sessions ovide a good atmosphere for controlled trial of various amplification devices. chargeable body-type hearing aids with a flat frequency response have been found fective for use as wearable auditory ~~trainers to be worn~~ trainers during speechreading instruction.

Speechreading lessons are found effective that emphasize (1) instruction regarding sually confusing phonemes, (2) the predictability of the English language in conversa- onal speech, (3) the selection of important visual/auditory word clues from conversa- on that facilitate correct interpretation of meaning, and (4) instruction relative to cilitating environmental factors which allow for greater use of residual hearing and sual clues (Hull, 1969). These methods are also easily adapted for use in auditory aining to provide an interesting and effective approach for this age group. Individuals th visual problems who are also hearing impaired are not excluded from the speechread- g sessions. For these persons, the sessions become useful as auditory training therapy.

Extension of the more formalized speechreading/auditory training classes may clude assignments that involve, at a beginning level:

1. Speaking to at least one other resident (person) at sometime during each day before the next speechreading class and, for example, to carry on at least a two-minute conversation. They are instructed to record any difficulties in carrying on that conversation so they can be discussed during the next speech- reading/auditory training class.
2. Residents are given assignments for practice regarding what they learned in speechreading class during special activities of the retirement center, at church, or at the Senior Citizen's Club.

any aural rehabilitation program within a retirement center, carry-over from the

speechreading/auditory training class can be effectively conducted through the activity director as checker games, cards, and other activities are being carried out. It is important that the audiologist and activity director work closely during these extensions of the aural rehabilitation program.

It is generally not recommended that speechreading sessions last any longer than 45-60 minutes due to factors of fatigue within this age group. Short "breaks" from intensive work are taken as needed during the sessions. The classes should meet at least once or twice per week, and numbers of class members should be limited to 8-10 per class. It is recommended that as clients progress in their communication skills, advanced classes be developed and new, less skilled clients be placed in beginning classes. Periodically it is well for a skilled member of an advanced class to visit a beginning class to demonstrate his/her skills. This tactic not only instills hope on the part of the beginning client but also the desire to achieve similar skills in communication.

At times, speechreading/auditory training classes can be used for purposes of socialization to promote a better atmosphere conductive to communication among residents within the retirement center. These socialization efforts are, however, necessarily structured as extensions of activities utilized within prior speechreading classes. The socialization aspects have also been found to be successful for use in conjunction with aural rehabilitation programs for the elderly within senior citizens' centers and other community programs. Other successful extensions of speechreading/auditory training classes included Captioned Films for the Deaf which can be shown on a routine basis for all hearing impaired elderly.

Specific Suggestions for Initiation of Aural Rehabilitation Programs for the Elderly Client

Administration.--Aural rehabilitation programs in the retirement center should be coordinated by the audiologist but should also involve persons who hold the following

administrative positions: (1) the administrator of the retirement center, (2) the head of nursing, (3) the activity director, (4) the social worker, and (5) the nurses' aides.

Administrative coordination is necessarily maintained by periodic meetings of the audiologist and the representatives of the retirement center listed above. These meetings, at least twice per year, should have as their purpose discussion of the maintenance and improvement of the program. The audiologist should, however, be in continual contact with the retirement center personnel regarding the program and progress of individual clients.

Funding.--Funding of the aural rehabilitation program should come from the retirement center. Financial commitment on the center's part will provide for a more vital interest in its success. With appropriate medical prescriptions for diagnostic services, federal health insurance such as Medicare will provide payment for complete audiologic evaluations when conducted by an audiologist who is certified by the American Speech and Hearing Association and who has also applied for and received a provider number for administration of such audiologic services. Certain provisions may be forthcoming through federal health insurance which will make for greater ease in receiving payment for such services by the audiologist.

Payment for services by the retirement center can either be made on a per-client basis or on a fee-for-services contract. The fee-for-services contract is generally more satisfactory, the amount being negotiable between the audiologist and the administration of the center. If programs are being conducted at several centers, then a pro-rated fee can be established among them corresponding to the amount of time spent in individual centers and the number of clients seen.

Evaluation of Auditory Function.--Once the administration of the center has given its approval for the initiation of the aural rehabilitation program, the first step is achieving as complete an audiometric evaluation as possible on residents whose health or

ental state allow for such an evaluation. The procedures for complete evaluations can e seen in Chapter ___. It is recommended, however, that all residents who can be valuated be initially screened for auditory problems.

All screening evaluations should be conducted in as quiet an environment as ossible, as this first evaluation will, of course, determine the necessity for further esting including the hearing aid evaluation. It is recommended that all residents who re to be initially screened receive the following tests: (1) pure-tone air conduction nder phones, (2) impedance audiometry (tympanometry and acoustic relax measurements) or the determination of the site of lesion, and (3) assessment of auditory discrimination by the use of monosyllabic words (25-word list), and twelve sentences (C.I.D. Everyay Speech).

After all current residents have been evaluated, it is recommended that all new esidents be evaluated within two weeks after admittance to the retirement center. In his way, if hearing impairment is discovered, participation in the aural rehabilitation rogram can be initiated early. This early intervention not only encourages greater articipation in the aural rehabilitation program but also tends to prevent the severe epression that engulfs many elderly when they are taken from their home and placed in ne retirement center.

Records of Progress.--Complete records must be kept on each client. Results of udiometric evaluations should be kept not only in the client's master file but also n individual files kept by the audiologist. Progress, communicatively and socially, ust be recorded for each client who participates in the aural rehabilitation program. ne method which has been found to be successful is through the use of individual client's ocial Progress Reports. These reports are jointly made by the head nurse, the activity irector, the social worker, and the audiologist and kept in the client's file. These eports should include progress made by the client socially and communicatively and hould include an accounting of approximate number of times the client, for example,

poke with others, actively participated in social activities, went out to eat with amily members, attended to his personal appearance, and increased his physical activity. ncreased facility in one's ability to communicate will generally reflect itself in more spects of the elderly person's life than simply speaking to and understanding others. s the elderly person realizes that he/she can, indeed, communicate more efficiently ith others, he will often times become more ambulatory, show a greater desire for mproved personal appearance, and be more willing to venture into the world outside of he retirement center. These areas are necessary for a complete socio/communicative rofile and should be jointly maintained by those who are in contact with the clients n a day-to-day basis.

nservice Training

Of necessity for the maintenance of an effective and workable aural rehabilitation rogram for the elderly in the retirement center is an administrative and nursing staff ho is aware of (1) the devastation of hearing impairment on the aged person and (2) the ntricacies involved in dealing with these individuals. One very effective way of ssuring that the retirement center staff is aware of those problems and that a good orking relationship is established is through inservice training. The reader will ote, however, that inservice training is beneficial not only for the retirement center taff, but also the client.

The Retirement Center Staff.--As retirement centers traditionally have a rapid urnover in personnel, routine inservice training sessions should be conducted at least nce or twice each month. The length of the inservice sessions will, of course, vary ith the intensity of discussion, but at least one hour should be allotted. The inservice raining should involve the nurses; the nurses' aides, since they are more directly in- olved with the residents on a day-to-day basis; the activity director; the social orker; and the director of the retirement center. It is usually not necessary for the

etirement center director to be involved in all inservice sessions except when ndividual clients are being discussed.

Topics that are considered important for inservice training are as follows:

1. How the ear functions;
2. What is presbycusis;
3. The impact of presbycusis;
4. Hearing aids, their structure, care, advantages and limitations with this population;
5. How to trouble-shoot for hearing aid malfunction;
6. What speechreading is;
7. How to best communicate with the hearing impaired elderly person; and
8. Staff discussions of individual hearing impaired residents and their progress (or lack of it) through the aural rehabilitation program.

In essence, the inservice training provides the staff with insight into presbycusis, neir complications, and information about the progress of residents participating in ne aural rehabilitation program. It is essential for all new staff and previously mployed staff members who have questions regarding residents to attend inservice training.

The Client.--An approach to inservice training that has been found to be extremely ffective is inservice with the residents of the retirment center or with elderly persons n local senior citizens' clubs. The elderly person is personally interested in the rocess of aging and its effects on him/her physiologically and socially. Even though ne elderly persons will often not tolerate a long movie, lecture, or meeting, they will ttend inservice on the process of aging with eager anticipation. The content of this ype of inservice is much the same as inservice with retirement center personnel, with odifications that allow for personal involvement and interaction between participants. ven though those elderly in attendance should be allowed to relate personal experiences egarding their own auditory difficulties, the purpose of such inservice cannot take on

the image of group counseling. The purpose of such inservice is the presentation of information about (1) the structure and function of the ear, (2) the impact of presbycusis on communication function, (3) hearing aids, their uses, and misuses, (4) why some elderly persons cannot use hearing aids, (5) hearing aid maintenance and trouble shooting, (6) how participation in aural rehabilitation programs will benefit them, and (7) tips on how to more efficiently communicate with family and friends.

The elderly person is thus presented information that will allow for a better understanding of presbycusis, the aging process as related to hearing and how it affects him personally, and is encouraged to participate in the aural rehabilitation program. The basis for these inservice training sessions is the realization that one cannot limit the presentation of information about presbycusis only to those working with the elderly. It must also be taken to elderly persons who are forced to live with the devastating effects of presbycusis so they too will have a better understanding of what is happening to them. These inservice sessions also encourage greater participation by the elderly in aural rehabilitation programs.

Programs for the Well-Elderly Client in the Community

If all retirement centers within a given community work together to maintain an effective aural rehabilitation program for their elderly residents, then its viability increases many fold. To date, it is presumed that there is one existing program in this country that involves all retirement centers within its community. That is the Community-Wide Program in Geriatric Aural Rehabilitation administered by the Area of Audiology at the University of Northern Colorado (Hull, et al, 1975). This program, however, does not stop with the retirement center. Extension into the rest of the community is necessary if a complete program for the elderly is to exist. In a city as referred to above, with approximately 56,000 persons and over 100,000 in the community, there are many individuals over age 65 who are hearing impaired and in need of the audiologist's diagnostic and rehabilitative efforts.

It has been found that the most efficient methods for contacting hearing impaired lderly persons are through presentations by the audiologist at (1) the local community enior citizens' center and (2) the Public Health Service Well Elderly Clinics (diagnostic ealth clinics) regarding hearing impairment and the effects of aging on the auditory echanism. If interest is generated on the part of the elderly persons, then auditory creening programs can be established to determine which persons will require complete iagnostic evaluations, hearing aid evaluations, and entrance into the aural rehabilitaion program. The news media ~~(radio, television, and newspapers)~~ will generally devote ublic service space for announcements concerning clinics for hearing evaluations for lderly persons. These screening clinics can be held at such familiar places as the ocal senior citizens' center. If a mobile unit with sound treated facilities is availble, the testing sites can be established at several familiar sites for greater conenience for the elderly person.

The management principles which guide the aural rehabilitation program for the ell elderly in the community should be similar to those discussed earlier in this hapter which included: (1) counseling techniques, (2) considerations regarding hearing ids, (3) inservice, and (4) speechreading techniques. Modifications may necessarily be equired when considering the social vitality and mobility of the well elderly client in he community.

Payment for diagnostic services may come from the client himself or, with proper rescription from the client's physician, by the client's federal health insurance. ayment for aural rehabilitative services is not covered at the present time through ederal health insurance, so it must be made by the client or agency sponsoring the lient such as Social Services (Welfare), or Public Health.

fter Rehabilitation?

Through aural rehabilitative efforts, we are attempting to improve the communicative apabilities of the hearing impaired elderly so that they may be able to function at a

into a non-communicating, non-functioning role begin to emerge again into society, opportunities for employment and social interaction must be offered them if they so desire. We must look beyond the fact that a much longer life has been given to the elderly. We have for too long looked at that gift of extended life as our ultimate goal for the aged person. If we are, indeed, adding more life to those additional years, we must also look toward allowing the elderly to function as productive citizens, to thus make use of the skills we are teaching them through our rehabilitative efforts. As work is expanded by audiologists toward aural rehabilitation for the approximately 17 million individuals over age 65 who possess some degree of hearing impairment, we must also look toward finding a place for them in our society. They were once functioning citizens and some will once again be seeking their place in communities across this nation.

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SUGGESTIONS FOR MORE EFFICIENT COMMUNICATION WITH THE HEARING IMPAIRED AGING PERSON

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Techniques for more efficient communication between the staff and the hearing impaired residents which include:

a. Speak to the resident at a distance no greater than six feet and no closer than three feet.

b. Use light to its utmost, but focus light on your face (the speaker), not on the face of the elderly person. Do not use a bright glaring light. It should be soft, but relatively intense. Do not speak with light from a window, for example, at your back even though the room

may be well lighted, you will become only a dark image to the listener.

c. Speak at the visual level of the listener. If the elderly person is confined to a wheelchair, for example, sit or kneal so that your face is visible without physical effort on the part of the listener. Make your change in physical position a natural one--not one that reflects a real effort on your part.

d. No matter how hearing impaired the elderly person is, do not speak directly into his or her ear. This not only distorts your voice, but the intensity distorts the signal that is passing through an already malfunctioning ear. Always face the person when speaking.

e. Speak at a natural rate. Do not slow your speech excessively. This distorts the articulation patterns of your speech and causes the elderly person even greater difficulty in understanding you.

f. Speak at a slightly louder than normal intensity. Do not speak so loudly that you notice it as uncomfortable to you. If you are speaking so that the elderly person can see you well, at a natural rate (if your natural rate is a rapid one, then slow your speech rate slightly) and at a slightly louder than average intensity, the hearing impaired person will have less difficulty understanding you.

g. Do not speak to the back of the hearing impaired person. If you are approaching the elderly person from his or her back, walk around so that you are visible. To avoid startling the person, a gentle hand on the shoulder or arm as you become visible is appropriate.

h. Speak in short sentences. If what you are saying involves directions or instructions, break them into short, concise statements and wait until you are sure each is understood before going on to the next. If one statement is not understood, use other words to describe it. Do not place the elderly person in a position of failure by using the same words over and over that were not understood.

i. If the elderly person seems confused by your statement and answers inappropriately, do not ignore the confusion by simply moving on to another topic. Explain where and how the misinterpretation may have occurred and try again. In this way, the elderly person knows that you are aware of the confusion, accepted it because of the auditory problem, and feel that the elderly person can, indeed, function more efficiently than he or she did that time. Do not be afraid to ask the person where confusions seem to occur most often when talking to you. The elderly person may have some relevant ideas that would make communication with you more efficient and enjoyable.

ADJUSTING TO YOUR NEW HEARING AID

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Introduction

The purpose of this booklet is to enable you to adjust to your new hearing aid so you may utilize its benefits more effectively. For some time now, you have not been hearing sounds or speech very well. When you put on your hearing aid you will be returning to the normal world of sound. It is only natural that you will have to train yourself to accept these sounds again, and to also make them meaningful. The young infant, who is entering the world of hearing, has a very difficult adjustment to make in accepting and recognizing sounds; you have the advantage of having heard and recognized them before; you will merely get used to them again. Throughout this difficult adjustment period, you must remember that there is no instant, overnight formula to utilizing a hearing aid effectively. A hearing aid is, at best, only an aid to communication. However, it is the best tool that we can provide to help your type of hearing loss at this time.

At first it will seem to you that all the noises in the world are conspiring to drown out the conversation of your friends and family. Airplane and traffic noises, footsteps, crackling paper, and your own voice, will all sound unnaturally loud to you when using a hearing aid. But remember, normal hearing people hear all those sounds loudly too, but they have learned to ignore them by pushing them subconsciously to the back of their minds; while hearing consciously only specific things, such as speech. When you learn to to disregard these background noises, you may still find it

difficult to understand all the speech you hear or all the sounds that are in your environment. This is a very common complaint among hearing aid users, However, it can be overcome by enrolling in a speechreading(lipreading) class as soon as you purchase your hearing aid. Speechreading will help you in general communication with others; consider it an important supplement to the use of a hearing aid. While speechreading also has its limitations, this training and the hearing aid together are very often much more effective than either one alone.

The difficulty of adjusting to a hearing aid varies with the type and severity of the hearing loss, the age of the person involved, whether the period of adjustment was augmented by speechreading training, and his attitude toward using amplified sound to help his natural hearing. If you have a sensori-neural type hearing impairment, you may never be able to understand 100% with the hearing aid or any other amplifier,whatever its cost. The reason for this is that your hearing nerves, which transmit the sound to the brain, may be like frayed telephone wires that simply cannot send a clear message to the brain. Also remember that since a hearing aid makes speech louder but may not make it clearer or more distinct, there may need to be frequent adjustments of the volume control. In fact, this may be needed several times each day for maximum hearing efficiency.

Whatever the type of hearing loss it is important to follow a planned program of learning to use a hearing aid. The ease or difficulty of hearing will vary depending on the loudness of background noises, the distance of the listener

from the sound source, the clarity of the signal, and the lighting (which may interfere with speechreading). The next section provides a schedule for you to follow in your adjustment.

Learing to Use Your Hearing Aid

This schedule is for you to follow as fast or as slowly as you feel advisable for your particular needs

The First Week or Two

For ½ to 1 hour in the morning, ½ to 1 hour in the afternoon, and ½ to 1 hour at night, wear your aid in a quiet room in these situations (start with a low volume setting and gradually increase it to the recommended level).

1. Read aloud to yourself, to learn to adjust to your own voice, as it will sound different to you.

2. Talk with one person at a time, at a distance no greater than six feet. Watch the speaker's face attentively while listening. Ask him to speak in a clear, natural voice-- not too fast or too slow-- and do not let him shout or "mouth" (exaggerate) lip movements. In the evening, this can consist of a quiet listening hour during which someone can read to you for ½ to 1 hour. By watching their face all the time, you can put together what you see and what you hear to make speech more meaningful. Watch for the differences on the lips between the /p/,/t/, /s/, /b/, /f/, and /m/ sounds. These are the easiest sounds to see on the lips. Although consciously looking for these sounds, try to obtain the general idea of the conversation.

3. Listen to these sounds:

   a. Radio or recorded music. Try to identify the instruments within the music. Ask one of your family to tune the television so it is comfortable for him at a distance of six feet and carefully adjust your

ually move back.

b. Environmental sounds: Try to identify car or airplane motors, clocks ticking, footsteps etc., and investigate each sound to determine its orgin.

During this time, keep a notebook in which you record your practice. Record notes on the words which were difficult for you to understand. Each night you should give this list to whoever is assisting you so he can make up a sentence with each word that has been difficult for you that particular day. He can then read the sentences to you in a different order while you listen and watch carefully for the visual and auditory clues that will help you to understand these problem words. You should learn to relax during this listening training, as the more tense or nervous you are, the less message you will understand. When this feeling appears, turn off the hearing aid and relax. Later, when you feel refreshed begin your practice listening exercises again.

The Next Two Weeks

Increase the time of wearing the aid to 1½ to 2 hours three times a day. Take care to rest if it tires you or makes you nervous, but wear it as long as you can comfortably tolerate it. Arrange these listening situations in a quiet room:

1. Talk to several people at a time, at a distance of about six feet. Cross- conversation may be difficult at first, as you may have lost the ability to catch the various voices. Pay close attention to each speaker, watching his lips, gestures, and facial expressions as well as listening care-

fully to him. When that speaker has finished, you can usually tell by the direction of his glance who is speaking next. This will allow you to shift your attention to this next person and eventually you may even be able to follow the "rapid-fire" conversations at bridge or cocktail parties. However, do not attempt these extremely difficult listening situations quite yet !

2. Listen to these things:

a. News commentators on television or the radio. You should sit close to the loudspeaker at first. Avoiding distortion of sound by setting the volume at a low level, Your goal should be comfortable listening at approximately six feet.

b. Music or singing over television, radio or phonograph. If your loss is greatest in the high pitches, listen especially to string instruments and to soprano singers.

c. While the vacuum cleaner or refrigerator is on, listen to someone talk. Relax and try to listen to sounds, and not to the motor noise.

3. Continue the listening hour in which someone reads to you quietly.

4. Constantly enlarge the list of words that are hard for you; by now, your notebook should have many pages of these words.. Your assistant should be able to think up sentences off hand with these words that are hard for you. Often times others will help you with sentences so you can practice in listening and watching the lips of different people.

The Next Few Months

Begin to wear the hearing aid for a longer time, wherever you go, so that eventually you will be wearing it all day.

the recommended volume setting. Arrange for these experiances:

1. Turning your volume fairly low, go outside and take a walk. Listen carefully and identify all the sounds you hear -- childrens voices, dogs barking, horns blowing etc.. Do this everyday alone until you are ready to have someone accompany you on your walk and talk to you. Listen for his voice above the street noises.

2. Begin attending public gatherings, start with church services, or lectures. Sit as far front as possible in the middle, so you can watch lips, gestures and facial expressions of the speaker. Experiment with the volume and tone controls, to achieve maximum hearing with maximum comfort. Learn to regulate the volume and tone controls by feel rather than looking at it so you will not need to take your eyes away from the speaker. Later you can go to the movies by following the same procedure. Avoid sitting under a balcony, as the sound will be distorted there. The best seating is found:

a. At the movies: 8 to 15 rows from the front, as close to the center as possible.

b. At church: Approximately the 5 th row from the front, near the center.

c. At lectures: 4 to 6 rows from the front, near the center.

3. Listen to all types of television or radio programs, music, news commentators, plays etc. Always listening in a relaxed, attentive manner at a normal distance (approximately six feet).

4. Find varied hearing experiances of your own both inside and outside. Continue the listening hour, although by now you should be able to wear your hearing aid most of the time at the recommended volume setting.

Follow this program closely until you find yourself and

your family satisfied that you are obtaining muximum efficency from your hearing aid. If you are not progressing satisfactorily by now, your particular case require private visits to an audiologist. He may help you through the above steps or prescribe speechreading lessons which will give you the proper orientation to visual clues.

The Care and Feeding of A Hearing Aid

A hearing aid is basically an amplfier. It picks up sound waves, amplifies them, and deposits them in your ear loud enough for you to hear them. As any electrical device it can breakdown with age or rough treatment. The following are some suggestions in the care of your hearing aid:

1. **Loudness**

   a. Following the period of adjustment the power setting may be indicated by colored nail polish placed at the top of the volume wheel. This will remind you of the recommended volume setting.

   b. Learn to determine a proper functioning hearing aid by listening for a squeal. If your aid is an earlevel model, turn the volume to its maximum; the aid should squeal. If it is a body type, put the receiver close to the microphone with the volume at maximum; the aid should also squeal. In either type of aid, no squeal indicates that their is no power, check the batteries.

   c. You should have your hearing aid checked by a hearing aid dealer about twice a year to insure that it stays in a like new condition. If your aid must be kept for repairs, ask the dealer to loan you one so that you are not with-

a loaner aid is part of the dealer's normal service procedure.

2 Batteries

a. Batteries last about 4 days at maximum power

b. Normally cost about 45¢ each.

c. Be sure that the battery is inserted with the + sign at the correct end.

d. Remove the batteries from the hearing aid when it is not in use (such as at night). This will conserve your battery power and save on your monthly operating expense.

e. Insure that there is not a corrosion deposit on the batteries, as they may transfer it into your aid. Slight corrosion deposits are removed with a pencil eraser, while, large deposits can be wiped off with a damp cloth.

f. Do not attempt to save batteries by lowering the volume, wear the aid at its recommended level.

g. Extra batteries should be kept on hand at all times, however, a one months supply is usually sufficient. Store your extra batteries in a cool dry place, such as the refrigerator. Insure that you store them in their original containers.

3. General cautions:

a. Keep dust out of the microphone..

b. Do not expose your hearing aid to radiation or dithermy (X-rays or excess hot and cold temparatures).

c. You may clean the case, receiver, and cords with a damp cloth only. Do not use alcohol or cleaning fluids as they damage the case.

4. Special reminders for body type hearing aids:

a. When you purchase you hearing aid, obtain an extra receiver and cord. These are common malfunctions of

b. Avoid blows to the receiver as it is very delicate.

c. When pulling the cord out of the hearing aid or the receiver, grasp the plastic part of the prong connection firmly and pull gently. Never jerk at the cord.

d Do not allow the cords to be pulled, bent, or knotted. If it is necessary to anchor the cord, slip it through a safety pin.

e. Keep the prongs of the cord clean, If they become corroded, a damp cloth and/or an emery board will clean them very well.

5. Earmolds--

a. Wash the earmold daily in a solution of soap and warm water. A pipe cleaner should be used to remove wax and dirt frim inside the canal of the mold. Dry the mold carefully and blow the water out of the canal. Never use alcohol or cleaning fluids to clean the earmold, as these solutions tend to crack the plastic material.

Simple Troubleshooting

What to do if the hearing aid is inoperative, weak or goes on and off:

1. Be sure that the aid is at the proper volume.
2. Insure that the battery is good and that it is inserted properly.
3. Try another battery to see if the aid works better.
4. Make sure that the battery is clean.
5. Check the earmold, insure that it is not clogged with wax

If your hearing aid squeals when it is in your ear:

1. Seal the end of the earmold with your finger and turn the volume to the highest setting. If it still squeals, there may be a leak in the hearing aid itself, see your

2. If the aid does not squeal with your finger plugging it, there is possibly an earmold misfit. Try some vaseline around the canal piece(the part that fits in the ear). If your hearing aid stills squeals, a new earmold is usually required..

What to do for scratchy noises or intermittent operation:

1. Try a spare cord (if a body type aid).

2. Move all switches back and forth. This may remove fine particles of dust or lint interfereing with proper electrical contacts. Removing and inserting the cord plugs in the receiver, as well as in the hearing aid may also correct the trouble.

If you notice any of the above mentioned conditions, try the troubleshooting techniques as they will save you money on repairs. However, if these techniques do not correct the problem, see your hearing aid dealer. Do not attempt to repair it yourself as you may void the warrantee.

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SUGGESTIONS TO FACILITATE INTERACTION WITH VISUALLY IMPAIRED ADULTS

by
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The following suggestions are being directed to such personnel as nurses, nurses ids, social workers, welfare workers, and other ancillary personnel in a professional r para-professional role interacting directly or indirectly with adults who are isually impaired, living with their families, living alone, in a residential community uch as a retirement home, or in a hospital setting. This list is by no means ex- austive. They serve merely to stimulate your thinking to meet in a creative manner nter-personal problems that might arise between two human beings, one of whom sees nd one of whom has a visual problem.

The suggestions below have not been numbered, because this may result in assuming hat number one is more important than number twelve. Also, the items are separate ituations and not necessarily related to the previous or subsequent paragraph.

. . . . . .

ot all "blind" individuals are totally blind. The term "visually impaired" is broader nd means that the vision is less than normal along a continuum down to total blindness.

o not suspect the client of malingering if he can see to do a certain task and then mmediately afterward cannot see to do another task. He might comment about the pretty olor of your dress and then ask you to read something to him. He might see his wallet n the table but then not be able to find his door key that has fallen onto the floor.

hen visiting a client at his home, identify yourself even after several visits. Do ot assume that he will remember your voice when simply saying "Hello". A more ef- fective way would be to say something similar to: "Hello, Mr. Brown, I am Mrs. Smith rom the County Nursing Service."

f you are orienting the client to a new room, you might ask him what he can see in he room. He might than say, "The bed is over there. This door is probably a closet. ere's the dresser." This then would indicate that details you would need to supply ater--such as "Your phone is here on the wall." If he cannot see enough to identify tems, walk with him around the room, naming each landmark, tapping it and putting is hand on it. Give him time to examine each; give him freedom to move his hands. o not have a death grip on his hand or finger, thus preventing him from exploring. o not grasp his finger to show him something. Instead, take his wrist and guide is hand to the object.

f the client is not ill, let him unpack his own things and put them away. First he eeds to be oriented to his new surroundings. After that, he should unpack for imself. He will gain more independence if he puts things away and know where to ind them than if you, prompted be a feeling of kindness, do it for him. Later, if ou have done it for him, he does not know where you put his socks or his toothpaste r white shirts.

o not raise your voice when talking to a visually impaired person. His problem is n his eyes, not his ears.

Feel comfortable using words of color or such other terms as "watch television", "see the editorial in the newspaper", or "look at this." These words mean more than looking with the eyes. They often mean UNDERSTAND, EXAMINE, BE AWARE OF, or BE INFORMED ABOUT. Even when they mean seeing with the eyes, the visually impaired person must not expect all other persons to change their way of talking just because of him. He must become comfortable using these words, too, as he used to do when his vision was normal. He can often "look" with his hands.

When a seeing person introduces a blind friend to another seeing individual, the introducer might say, "On my left is Mary Jones. Mary, I'd like you to meet Ann White." This is especially helpful when environmental noise or soft carpeting prevents the blind person from knowing exactly where Mary Jones is. Consequently, the blind person might look in the wrong direction, embarrassing all three concerned. If the third person--Mary Jones--makes some kind of noise before she speaks--such as quietly clearing her throat, jingling keys unobtrusively, or rattling paper bags if she is carrying something--this also helps to indicate her location.

Treat adults as adults and not as children or invalids. In such basic tasks as taking off one's coat, putting something in one's pocket or handbag, or unlocking one's door, let the visually impaired person do it himself. You would probably not insist upon doing these things for a seeing person.

When handing a blind person money, do not fold all the bills together and then hand them in a bundle to him. He will not know the demoninations of the bills for future use. Instead, you might hand him all the ones together and say that they are ones, then the fives, etc. In this way, he can keep his bills sorted correctly so that in future spending he will not pull out the wrong bill only to have someone tell him he is wrong. There is great personal satisfaction in being able to do a task correctly even if one cannot see to do it.

If you are serving as a waiter, nurse's aid, or stewardess, tell the blind person quietly what you are placing before him such as "your orange juice, sir." Thus, the blind person knows that it has arrived and what it is and how to approach it. If the dinner platter is being served, a quite brief listing of the items such as "Peas, mashed potatoes, and chop, sir." helps. One attacks a chop differently from half a chicken or beef patty. For instance, merely saying "Dessert', sir", is not much help in situations where he did not order a specific dessert such as at a banquet where one is not given a choice. Is the dessert cake or pie or ice cream, or pudding, etc. Does one use a fork or a spoon?

You should assume that a visually impaired adult wishes to be well groomed. "Well groomer" does not necessarily mean flashily dressed or the most fashionable attires Basically, it means that being clean and reasonably well coordinated. If you notive a spot or soil stain on his clothing, tell him quietly about it in a one-to-one situation and indicate the location of it. He will appreciate knowing or being able to change into some other garmet before going out or receiving guests. Also, if you notice that jacket and trousers or suit and blouse clash, tell him or her. You do not do any kindness by refusing to comment about it. Similarly, if the blind person pointedly asks, "Is this clean enough to wear again?" or "Does this tie go with this suit or shirt." Be Honest.

n the kitchen of the client's home, stress the importance of orderliness and onsistency in storing food, utensils, or supplies. The whole family must then ooperate in making this system functional. The items that might be confused hould be kept far apart such as the salt box and the cornmeal box if both are ylindrical in shape and have pouring spouts. If braille is utilized, labels might e employed. Guests may render no real service by insisting that they do up the ishes after a visit. There is too big a danger that the blind person will later e unable immediately to find the sugar bowl or the salad dressing, etc.

he thoughtful guest might suggest just before leaving, "Would you like me to gather p the glasses from the living room and take them to the kitchen?" This can be very elpful; otherwise, the blind host or hostess must go exploring ever so carefully rying to track down all the dishes and ashtrays, always running the risk of knock- ng over some of them and making a mess on the floor.

f the blind person lives in a multiple dwelling such as an apartment building where he mail—or part of it—is deposited in a common receptacle, a neighbor might eparate out the blind persons's mail and then have an agreed procedure such as placing t by the blind person's door if he is not at home. If you hand the mail to him ersonally, it is very helpful if you just mention the return addresses. It is very rustrating to have a handful of mail and not know what the separate pieces are.

f the blind person asks you to read his mail to him, do so in a matter-of-fact anner. Remember that it is HIS personal mail and that under other circumstances, ou would probably not be reading his mail. Do not comment about what you are eading or ask him to explain what is meant or why he received it. That is his usiness. Also do not repeat to others the contents of his mail. Do not violate onfidentiality or trust.

he blind person should develop some system for keeping personal records even if it s no more than bills paid. One procedure might be (if he uses braille) to braille nformation on a file card and then staple that card to his receipt so that he can dentify it later, if necessary.

f he typewrites or addresses envelopes by hand, he would do well to use printed eturn address stickers to put on every piece sent out. The blind person cannot be ure when his typewriter ribbon is faint or illegible or if his pen is dry. The abel guarantees that the post office will return the piece to him thus alerting im to the problem.

f the blind person will be staying in a hotel or motel alone overnight, he might lan on using a rubber band to put over the outside doorknob of his room door. Should he become disoriented in finding his own room or if the elevator lets him off on the wrong floor, the rubber band would be helpful to him to indicate the correct door.

hen staying in a hotel that has a self-service elevator, the blind person should ask the bell-hop on the first trip to explain the button panel to him so that he can go up and down by himself.

henever in doubt, feel comfortable to ask the blind person, "Can I help in any way?" or "Is there anything that I can do to help?" This then gives the visually impaired person opportunity to suggest a way to assist or to decline help. Do not assume that you know what kind of help he needs and foist it upon him.

he blind person may know how to thread a needle (self-threading needles) and how o sew, but he or she may need to check shade of color of thread. For instance, it s not enough to know that red thread is needed but to be sure that it is the ppropriate shade of red.

hen you visit the client and have business with him, talk directly to him using is name and not to someone else who happens to be in the room. For example, if ou are doing an intake, do not ask of the other person, "What is his date of birth?" ather, say, "Mr. Thompson, I need to write down certain information on this form, o I will be asking you questions. What is your full name? What is your date of irth?" In this way, he knows that you are writing and that you are not just an nquisitive busy-body. If the family member begins answering for him, remind that erson that Mr. Thompson is the client and that you are sure he can speak for himself.

hen in a restaurant with a blind person, read the menu to him, including prices. therwise, he may wonder whether the swiss steak is more expensive than the broiled ound steak. If he is paying the bill, he may have to calculate closely. If he is our guest, he may not wish to choose an expensive item.

eciprocity is a two-way street. You may feel the inclination always to be the one ho "treats" him to a meal or snack. However, permit him to host you also. It is ery frustrating for a blind person never to be permitted the pleasure to treat his riends. There is something phoney about the relationship if the seeing person can ever let himself to be indulged or hosted by a blind person. In such an artificial elationship, the blind person is degraded and dehumanized.

o not tiptoe around or stare at or spy on the blind person without his knowledge. ou would not do this to your seeing friends. If the blind hostess goes to the itchen and you follow, make your presence known. Don't follow her noiselessly ust to watch her do something such as find the cookies or pour coffee. This would e rude. Also, she may turn suddenly and bump into you startling both of you, causing n accident, and embarrassing you for having been underhanded.

f a blind patient is in the hospital as a patient, tell him what you are going to o before doing it. For instance, if he is lying in bed, he might not hear you oming or know that you have a thermometer in your hand. If you suddenly poke the hermometer between his lips, it is startling and uncalled for. If you are going o remove tape from his arm, tell him so beforehand rather than suddenly coming pon him with his first cue being the yanking of tape from his arm.

LIST OF RESOURCES

Compiled by Nancy Hey

and Publications

aching and resource manuals

. A Step by Step Guide to Personal Management for Blind Persons 2nd Edition, 1974 Available from AFB - $3.00

. Homemaking Goes Creative by Beret M. Yask, State of Nebraska, Division of Rehabilitation, Omaha, Nebraska - $2.50

. Homemaking Manual Available from Western Michigan University - $1.00

. Techniques for Eating Available from Western Michigan University - $1.00

. Basic Components of Orientation and Movement Techniques Available from Western Michigan University - $1.00

. Caring for the Visually Impaired Older Person Available from Minneapolis Society for the Blind, Inc., 1936 Lyndale Ave., South, Minneapolis, Minn. 55403 - $5.00

. An Introduction to Working with the Aging Person Who Is Visually Handicapped Available from AFB - $3.00

. Handbook for Teachers of the Visually Handicapped Available from American Printing House for the Blind

. Handbook of Resources and Materials for the Visually Handicapped in Colorado Available from CIMC-VH

. Self Study Course 1 Housekeeping Skills Available from Center for Independent Living, New York Infirmary, 310 E. 15 St., New York, N. Y. 10003 - Cassette and Books - $18.00

. Toward Independence by Anne Yeadon Available from AFB - $4.00

. Recreation for Blind Adults by Maurice Case, 1966 Available from Charles C. Thomas, Publisher, 301 - 327 E. Lawrence Ave., Springfield, IL

. Understanding Legal Problems for Older Adults Available from Center for Non-Traditional and Outreach Education, UNC, Greeley, CO 80631

ookbooks

. Cooking for Two (Large Print) Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402 - $1.25

. Crockpot Cookbook (Braille), Beth Shalom Braille Committee, Mrs. Delores Hakan, Chairman, 2100 West 79th Terrace, Prairie Village, Kansas 66208

. Osterizer Blender Braille Cookbook, 5055 N. Lydell Ave., Madison, Wisc. 53217 Make check payable to Oster Corp. for $4.25, Attn: Ward, Public Relations

. Evelyn Lee's New Cook Book (Braille 3-vol.), Braille Institute of America, 741 N. Vermont Ave., Los Angeles, CA 90929

. BBSS Cookbook of Convenience Foods (Braille - L.P.), Brooklyn Bureau of Services, 285 Schermouhorn St., Brooklyn, N. Y. 11217

. Cooking with Betty Crocker Mixes (L.P.) - FREE/Betty Crocker Talking Recipes (records), General Mills, Inc., 9200 Wayzata Blvd., Minneapolis, Minn. 55440

. Easy Ways to Delicious Meals by Campbell (Braille or L.P.), Volunteers Services for the Blind, Inc., 332 S. 13th, Philadelphis, PA 19107

. APH (American Printing House), P. O. Box 6085, Louisville, KY 40206. Ask for current price list of braille and large print cookbooks

. Library of Congress, Regional Library of Congress, Colorado State Library Annex, 1332 Lincoln Street, Denver, CO 80203. Ask for current list of cookbooks.

. A Cookbook for Diabetics American Diabetes Association $1.50

atalogues of Aids and Appliances available from AFB, Howe Press.

ewing Techniques for the Blind Girl by Sally Jones, Instructor, Orientation Center for he Blind, 400 Adams St., Abany, CA

he Art of Makeup for Visually Handicapped by Dorothy Puozzi, The New York Association or the Blind, 111 E. 59th Street, New York, N. Y. 10022

ialogue Magazine, Dialogue Publications, Inc., 3100 Oak Park Ave., Berwyn, IL 60402 agazine for visually impaired people giving daily living and household care tips.

eader's Digest Large Print - $19 per year, Mrs. Ellen Parker, Reader's Digest, leasantville, N. Y. 10570

uideposts Magazine Large Print - $3.00 per year. Guideposts Associates, Inc., Carmel, ew York 10512. Also has recorded editions.

AND APPLIANCES

abels

.. Embossed letters and numerals - FREE - Telephone Pioneers of America, Kilgour Chapter #3, 702-225 E. 4th Street, Cincinnati, Ohio 45202

2. Lobels - Price list and catalogues available from Mrs. Gladys E. Loeb, 2002 Forest Hill Drive, Silver Springs, MD 20903

atalogues and prices of aids and appliances available from AFB and Howe Press.

elf-threading hand sewing needles available at most fabric stores, Singer stores, or ibson's.

arge Print playing cards available at Gibson's. Large print bingo cards available rom Minneapolis Society for the Blind @10¢ each.

alking Books and Magazines or applications available from Colorado Library for the lind and Physically Handicapped.

CIES

ican Bible Society, P. O. Box 4835, Grand Central Station, New York, N. Y. 10017 - rovide Bible - new and old testament on records, cassettes and in braille.

ican Diabetes Association, 18 East 48 Street, New York, N. Y. 10017 - Information and recipes, cookbooks for diabetics.

ican Foundation for the Blind, 15 West 16th Street, New York, N. Y. 10011. - Will send catalogues of aids and appliances, publications and services available.

ican Printing House for the Blind (APH), 1839 Frankfort Avenue, Louisville, KY 40206 - Distributes teaching materials and will send catalogues of braille materials, large print, and academic subject areas.

d Rehabilitation Department, Sangren Hall, Western Michigan University, Kalamazoo, Mich. 49001. Distributes teaching manuals for working with the visually impaired homemaker.

stian Record Braille Foundation, 4444 S. 52nd Street, Lincoln, Nebraska 68506 - FREE services - provide braille records, tapes, large print books, magazines, of religious nature on loan basis.

orado Department of Rehabilitation Services for the Visually Impaired, 928 13th Street, Greeley, CO 80631 352-5180.

orado Instructional Materials Center for the Visually Handicapped (CIMC/VH), State Library uilding, 1362 Lincoln, Denver, CO 80203 892-2171. Organizes and distributes text ooks and materials to teachers of school age visually handicapped children.

orado State Library for the Blind and Physically Handicapped, 2030 Champa, Denver, CO 80205 892-2081. Distributes talking books, cassette books, and machines. Applications will be sent upon request.

erly Blind Project, 2662-C 11th Avenue, Greeley, CO 356-9393.

ley School for the Blind, 700 Elm St., Winnetka, IL 60093 - Will send bulletin of correspondence courses available free to blind adults.

e Press of Perkins School for the Blind, 175 N. Beacon Street, Watertown, Mass. 02172. Will send catalogues and current price list of aids and appliances.

neapolis Society for the Blind, Inc., 1936 Lyndale Ave., South, Minneapolis, Minn. 55403. Distributes manual for working with older visually impaired in nursing home setting.

ional Catholic Lending Library, Xavier Society, 154 East 23rd Street, New York, N. Y. 10011 Free services - provides books, cassettes and braille of religious nature on loan basis.

York Association for the Blind, 111 E. 59th St., New York, N. Y. 10022. Will send catalogue of non-prescriptive magnifiers and low vision aids.

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THE HOMEMAKER WITH SPINAL CORD INJURY

Spinal cord injury can result from either pathology or trauma. The cord may be totally severed, compressed, or partially injured, resulting in either total paralysis or partial paralysis (paresis). There may be partial or complete loss of voluntary motion and sensation below the level of injury. Lack of bowel and bladder control are major factors in the life of the individual and at the higher levels of injury pulminary function is curtailed. Some disease conditions of the spinal cord leave the visceral and sensory nerves intact.

Paraplegia results from an injury below the T-1 level. An injury above this level results in quadriplegia when the upper extremity becomes involved.

The following chart indicates a simplified version of the amount of function at different levels of injury and gives a clue to the activity that can normally be expected. Many persons function above or below these limits. Strength may be different in each extremity as well.

A homemaker with even a C-6 lesion may be able to perform a limited number of household activities if careful planning is accomplished. Design of physical facilities, self-help aids and orthotic devices can all contribute to independence. From C-8 through T-8 the possible activities are similar to those of a person with paraplegia except that trunk instability will affect reaching and the amount of weight that can be lifted. There is progressive improvement in ability and endurance below T-1.

The paraplegic condition frequently encourages fitting with braces for standing. It may be advisable to arrange a work place for standing in the kitchen or for some other activity where therapy and work or leisure time activity can be combined. A safety belt may be used to maintain balance so both hands are free.

Persons with any level of cord injury require a wheelchair, at least part of the time. The living environment must be planned for independent use of the chair. Work areas must be designed to allow access to equipment at heights which offer the maximum mechanical advantage. Lifting, reaching, positioning the wheelchair, pulling as in opening doors and drawers can be simplified by design features. Many tasks can be accomplished with greater ease through applying the process of work simplification -- namely changing work places, tools and equipment, sequence of activities, the materials used or the finished products. In other words, a total approach to solving the problems inherent in accomplishing each task.

It should be noted that complete independence in self care is not a pre-requisite for trying out most household tasks.

OT Department
CSU - 1974

FUNCTIONAL GOALS IN SPINAL CORD LESIONS

al d on	Key Muscle Control	Functional Goals
	Neck Upper trapesius	Manipulate electrical wheel chair with mouth stick. Limited self-care (feeding, make-up) using arm supports and externally powered hand splints.
	Shoulder muscles Elbow flexors	Turn self in bed with overhead arm slings. Transfer to and from bed with assistance. Propel wheel chair with handrim projections. Self-feeding with externally powered hand splints or clip-on equipments. Light hygiene (make-up, brushing teeth). Dress upper trunk.
	Wrist extensors Supinators	Transfer to and from bed and auto without assistance. Transfer to commode chair with assistance. Propel chair with projections. Self-feeding hygiene (shaving and grooming hair), dressing writing and skin inspection, using wrist-driven flexor hinge hand splints where prehension required. Drive auto with hand controls.
	Elbow extensors Weak hand	Transfer independence - bed, car, toilet. Propel wheel chair without hand projections. Wheel chair in and out of car. Independent in all self-care without hand splints or adapted equipment except catheter. Household activities from wheel chair.
- T 8	Hand muscles	Wheel chair up and down curb. Transfer to and from tub. Wheel chair to floor and return. Therapeutic standing with posterior leg splints. Care of catheter.
- T 12	Trunk stability	Wheel chair independence. Physiological ambulation with bilateral long leg braces and crutches. Complete self-care.
- L 5	Pelvic stability	Ambulation with bilateral long leg braces and crutches.
- S 2	Knee extension Hip flexion	Ambulation with short leg braces, crutches or canes.

ared by:
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CSU - 1974

The Diabetic Homemaker

Diabetes mellitus is a metabolic disease in which the body is unable to use carbohydrates. The symptoms of diabetes in the approximate order in which they show themselves are as follows:

1. Frequent, copious urination
2. Abnormal thirst
3. Rapid loss of weight
4. Extreme hunger
5. General Weakness
6. Drowsiness and fatigue
7. Itching of genitals and skin
8. Visual disturbances, blurring, etc.
9. Skin disorders such as boils, carbuncles, and infections

TYPES OF DIABETES:

There are two common classifications of diabetes. The first is called juvenile or insulin-deficient diabetes. It is also known as brittle diabetes and accounts for 30% of all the cases. The second category is adult or maturity-onset diabetes. Each of these seems to have certain clear characteristics of its own. Juvenile diabetes is the form the disease takes in all diabetic youngsters and adolescents. But, it is not confined to juveniles. Some adults get it, and a few adults suffering from the milder maturity onset form may suddenly have their disease take a turn to the more severe juvenile or insulin deficient form.

The fundamental difference between juvenile diabetes and adult diabetes is in the insulin situation. In juvenile diabetes, there is an absolute dificiency of insulin. Therefore, the insulin balance can only be brought to normal by making up the deficit through insulin injections. In children and adolescents especially, juvenile diabetes is very unstable. Another characteristic of juvenile or brittle diabetes is a direct sensitivity to insulin. The diabetic responds very sharply to the absence of presence of the insulin. The characteristics of adult

diabetes are quite different from the juvenile form. Seventy percent of diabetics are adult diabetics who acquire the disease after the age of thirty-five. Most of them are over weight when the disease strikes. The diabetes results from a relative rather than absolute insufficiency of insulin as in the juvenile diabetic. Most cases of adult diabetes can be treated with only dietary control. In other cases, insulin injections or Orinase (an oral drug) may be used.

COMPLICATIONS

There are two complications of diabetes which deserve attention. 1). The insulin reaction, 2). The diabetic coma.

1. Insulin Reaction - The symptoms of an insulin reaction in the order of occurance are as follows:

   a. Mild hunger
   b. Sweating
   c. Dizziness
   d. Palpitation
   e. Pale, moist skin
   f. Shallow breathing
   g. Trembling
   h. Blurred or double vision
   i. Mental confusion
   j. Very strange behavior
   k. Loss of consciousness

   At any point before unconsciousness, a lump of sugar, a piece of candy, or anything containing sugar will abolish the symptoms.

2. Diabetic Coma - Coma, the second major complication is exactly the opposite of insulin shock. Shock begins with an abnormal drop in the blood sugar due to too much insulin activity. Coma develops from an abnormal rise in blood sugar due to too little insulin activity. Unlike the insulin reaction, the diabetic coma is slow and undramatic in its onset. The symptoms are as follows:

   a. Frequent, copious urination
   b. Constant thirst
   c. Persistent hunger
   d. Flushed, dry skin
   e. Weakness, drowsiness
   f. Fruity odor or breath
   g. Deep, labored breathing
   h. Vomiting
   i. Unconsciousness

   Coma can be treated in the early stages by the diabetic taking an injection of quick-acting regular insulin.

   No matter which complication occurs, the physician should be notified at once.

PRECAUTIONS FOR ELDERLY DIABETICS:

1. Keep weight at normal or slightly below what is considered normal.
2. Take precautions to avoid injury and infection, especially to the feet.
3. Do not apply powerful antiseptics such as iodine to delicate tissues.
4. Avoid extremes of cold or heat.
5. Feet should be washed carefully once a day.
6. Never attempt to treat an injury or infection on your own. Go to a physician.

The Aging Homemaker

According to his textbook, Rehabilitation Medicine, Rusk notes that we are becoming increasingly aware that aging is not synonymous with disease, and also that not all illnesses are exclusively characteristic of old age. However, statistical information clearly demonstrates that people in the older age group have more than a proportional share of disabling diseases. Furthermore, the older disabled person frequently suffers from one or more chronic illness. Consequently, such complications have a major bearing on the elderly person's rehabilitation. These major disabling diseases are discussed in detail individually in the booklet, therefore, will not be dealt with here.

When working with an older person, there are some primary considerations for the rehabilitation specialist. Older people generally respond adversely to removal from their customary environment. They become confused, withdrawn, and often uncooperative. Consequently, rehabilitation can be more effective if performed in familiar surroundings. Time allowed for lessons and for achieving goals must be modified for the older person. A shorter lesson (15 to 30 minutes) is usually more successful than the conventional one hour lesson. The rehabilitation specialist should keep in mind energy conservation techniques at all times in planning lessons. Having the person sit while working will lessen the strain on hips and legs and provide stability if he has a balance problem. Recognizing the relative nature of the rehabilitation of the older person is more important. Since the return to a job is not usual, this cannot be used as a measure of successful rehabilitation. Therefore, adequate functioning in daily living becomes the principal measure of success.

PHYSICAL AND MENTAL HEALTH FACTORS

The slowing of bodily functions may mean a slowing of pace. The staff member working with older adults may need to count on activities taking a longer time. Changes in plans or directions need to be considered with enough time to readjust to the changes. Quick moves or rapidly changing plans may lead to confusion.

Although the older adult may have some chronic difficulties such as arthritis, heart condition, emphysema, digestive, respiratory, or blood sugar disorders, he may well have interest and energy to handle tasks that do not tax his particular disabilities. While these limitations are kept in mind and not ignored, at the same time it is recognized that productive contributions in non-threatening types of assignments may help the individual to gain a sense of mastery that makes it more possible to deal with illness.

In working with older adults, it is well to allow time to go into necessary detail, to repeat, and to give the senior adult time to look over content to be sure he understands. Written matter, dates on calendars, details written out make allowance for reminders, and also forfilling in for persons who may not hear or understand all of the details the first time. Sometimes older people are fearful about asking when they have not heard or understood clearly, for fear of slowing down the progress, or seeming incompetent. Since many older adults have some difficulty in memory of recent events, they may show real frustration or annoyance that they can't remember. Written reminders may help.

THE NATURAL PHYSICAL LOSSES OF AGING AND THEIR RELATIONSHIP TO BEHAVIOR

By Martha Lee Brauneis

Let's start at the average peak of life, 30 years, and say that we have then 100% ability, even though we do know that the aging processes have long been in motion. Now, the well person at the age of 75 experiences the following:

1. Blood flow to the brain is 80%. This causes
   a). Memory impairment
       Can remember 10 - 30 - 50 years age clearly but not what immediately happened.
   b). Thought processes.
       Cannot (absolutely) be rushed.

2. Brain weight - 56% remaining
   Due to the loss in number of cells and change in body weight.

3. Cardiac output at rest - 70% remaining

4. Maximum oxygen uptake during exercise - 40% remaining

5. Maximum ventilation volume during exercise - 50% remaining

6. Maximum work rate - 70%

7. Maximum work rate for short rapid burst - 40% remaining

8. B.M.R. - 84% remaining

9. Visual activity 42 - 70% loss
   a). Adaption to darkness
   b). Depth perception
   c). Color perception
   d). Sensitivity to glare
   e). Cataracts are apt to form

These losses can produce both confusion and fear with loss of independence and further frustration over loss of activity.

10. Taste buds - loss of 64% or only 36% remaining.
    a). Food becomes "blah." Decreased appetite thus proper food intake
    b). Loss of teeth
    c). Shrinkage of gum tissues; false teeth problem
    d). Reduced motility of stomach and intestines
    e). Decrease in digestive juices - constipation
    f). Hemorrhoids - complicates elimination
    g). Poor eating decreases mental vigor which in turn aggravates poor eating.

11. Loss of hearing 25%
    a). Occurs in high tones, certain vowels and consonants and background noises.
        1). Like living in a vacuum - can't hear noises that once meant "life". Can produce paranoia, fear, combativeness

12. Loss of 56% kidney glomeruli. 69% of the glomeruli filtration rate remaining.
    a). Urine smells foul
    b). May urinate more or less.
    c). Fear of soiling themselves with resultant embarrassment.
    d). Need to drink more liquids, yet often forgets to drink.

13. Number of nerve trunk fibers - 63% remaining.

14. Nerve conduction velocity - 90% remaining.
    a). Responses are slowed in the coordinative abilities - not nerve conduction

15. Plasma rate is down 50%
    a). Need a well balanced and appetizing diet: liquids, proteins, vitamins, etc., not only to rectify this condition but to prevent infection from occuring.

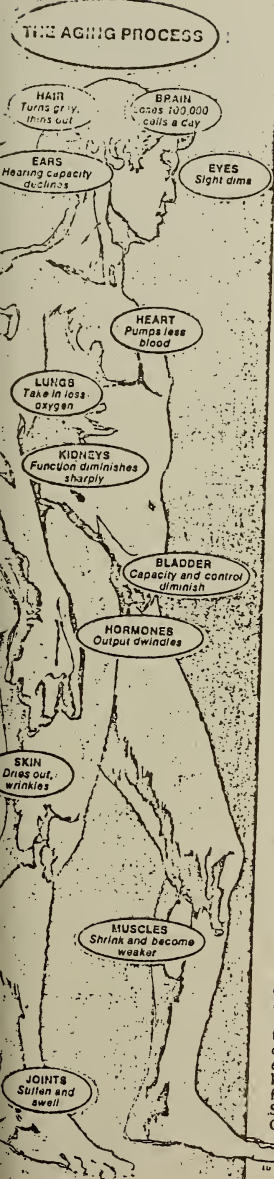
16. 43% of the lung capacity is lost
    a). Do not breathe deeply. Cannot work or exercise for long or as strenuously.
    b). Dry hacking cough at night
        1). Due to diaphragm, which has lost some of its elasticity, bearing up into the ribs and lungs. Elevating the head of the bed will often ease this condition.
        2). Sleep pattern interrupted.
        3). May want to take daily short naps during day to facilitate rest.

17. Sexual ability
    a). Decreased if no partner is available for any length of time.
    b). Decreased due to "fatigue" factor which further reduces the urge.
    c). Awareness of the opposite sex remains keen.
    d). Other means of sexual gratification than intercourse may take place such as masturbation, fondling of another of the opposite sex, etc.

With all these physical losses, the elderly individual is extremely vulnerable to disease and trauma as a result of incapacities in adjustment both perceptionally and functionally. In some of the elderly, it might produce a hypochondriac type of condition where the individual is asking for a pill for this and a pill for that to cover fear of losing more of their physical capacities.

MLB:mc
S.D.
April, 1972

Can Aging Be Cured?



Whenever you think you're really holding up pretty well—all things considered—take another look. If you're 30, you're already a little slower than you were just a few short years ago. If you're 40, check your hairline, your neckline and your waistline. If you're 50, take a look at a photo of yourself ten years ago. If you're 60 or older, you don't need any guidelines—the aging process has been all too obvious for a long time.

Can anything be done about it? Gerontologists (specialists in the study of aging) describe the process of growing old as a wasting disease. The skin begins to dry out, which means that wrinkles are on the way. The hair starts to turn gray—in most cases it soon will begin to thin out. The lenses of the eyes thicken and become slowly opaque. The hearing mechanism loses some of its sensitivity. Fat accumulates at the midsection. Muscles shrink and joints become stiff and sometimes swollen.

The inexorable deterioration of aging goes on deep within the body as well. The heart pumps blood with steadily diminishing efficiency and the blood vessels become less limber. The lungs take in less and less vital oxygen. Kidney function is reduced by half. The bladder's capacity is diminished. The flow of hormones from the ovaries, testes, adrenals and pituitary dwindles. The brain shrinks as 100,000 of its cells die each day. The body becomes increasingly vulnerable to infections and such "degenerative" diseases as cancer, arteriosclerosis and diabetes. Should none of these prove fatal, death comes finally from that cumulative mix of afflictions known simply as old age.

Now, a growing number of researchers are taking the view that something can really be done about old age. In laboratories around the world, they have begun to unlock the secrets of the aging process—and each new discovery improves the prospect that ways may be found to hold back the inexorable gray curtain of senility and prolong the years of youthful vitality. "We hope," says Dr. Alex Comfort, director of research in gerontology at University College, London, "to find a technique for interfering with human aging within the next four or five years—not for stopping the process, but for slowing it down."

Some of Comfort's colleagues think that by the end of the decade the period of productive adult life will have been extended by 20 per cent—thanks to new knowledge about the aging process. A few gerontologists, like Dr. Bernard Strehler of the University of Southern California, are even more sanguine.

"Someday," Strehler declares, "we may live almost indefinitely."

As matters stand, the average child born in America today can expect to live to about 70, fully 23 years longer than he could have at the turn of the century. Most of these extra years of life expectancy were achieved not through control of the aging process, but by improved sanitation and the conquest of the major fatal diseases of childhood such as bacterial pneumonia and diphtheria. But for today's adults, life expectancy has not increased appreciably. An American who was 65 at the turn of the century could expect to live thirteen more years. The life expectancy of today's 65-year-olds is fifteen years—just two more than in 1900. If the major killers of adults—cancer and diseases of the heart, kidney and blood vessels—were eliminated completely, researchers estimate that perhaps another ten years would be added to adult life expectancy.

What antibiotics, vaccines, improved sanitation and other advances of twentieth-century medicine have done is to reduce the afflictions of youth and thus vastly increase the ranks of the nation's elderly. The number of persons over 65 in the U.S. has grown at three times the rate of the total population. At 21 million, the elderly today constitute 10 per cent of all Americans; and the majority of them have escaped the afflictions that once plagued the young only to suffer through their declining years with debilitating infirmities—strokes, diabetes, arthritis and blindness. Care of the aged accounts for nearly a third of the nation's health costs.

The Dilemma

In tampering with the aging process, gerontologists clearly face the same kind of social dilemma that confronted the physicists who unlocked the atom—and already there is lively debate within their ranks as to just what the aim of their research effort should be. To extend the life span without removing the disabilities of old age, most agree, would place an intolerable burden on the social and economic structure of society. Slowing down the process of maturation poses equally frightening prospects; if this were to prove possible, youngsters might finish grammar school in their teens and graduate from college in their 40s. Accordingly, most researchers agree that their reasonable goal should be to stretch out the productive middle years. As Comfort* sees it, tomorrow's men and women in their 50s would look and feel like today's men and women in their 40s. Ultimately, it might take 80 years to reach the present physiological age of 60.

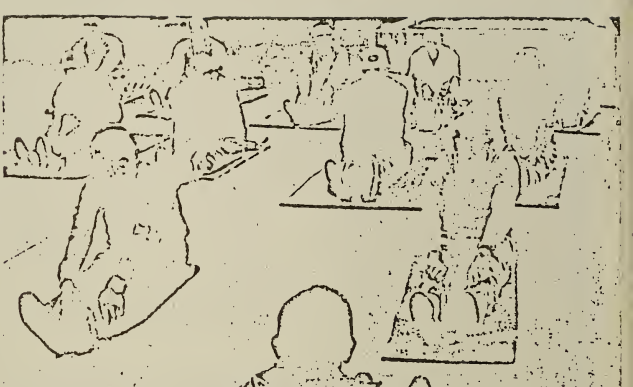
Controlling the rate of aging in the

*Who is also a sexologist and author of the current best seller "The Joy of Sex."

lle years would have important medi-
benefits as well. "People who are
g of cancer at 65 might die of the
cancer—but at 90," Dr. Roy L.
ford of the University of California
os A les told NEWSWEEK's Mariana
nel , in effect, you're curing can-
for those who are 65. If you slow
n aging, you shift such diseases to a
h later date, which is a 'cure'."
ut extending the life span is not just
atter of understanding the physical
nges of aging. Cerontologists are in-
singly concerned with the influence
sychological and social forces on the
g process. One reason for their con-
is that growing old has become in-
tionalized in contemporary society.
n earlier day, when the extended
ly was the rule rather than the ex-
ion, the elderly remained a function-
art of the family. In today's mobile
ty, the older person may have to
d his last years alone, in a "retire-
t village" or community of old folk
St. Petersburg, Fla., or sometimes,
ietically, in a nursing home.
esearchers are convinced that the
chment of the elderly has a direct
t on their longevity. "It's obvious,"
Dr. Erdman Palmore, a sociologist
Duke University's Center for the Study
ging and Human Development, "that
person is forced to retire, if he feels
ess and his income drops, then his
th, his interest in taking care of him-
and his urge to live longer may also
er. decline may have nothing
teve , do with his chronological
or genetic make-up."
tudies of elderly persons have shown
an unusually high proportion of per-
over the age of 60 commit suicide—
act, nearly 30 per cent of suicides in
U.S. are in this age group. "The most
ortant stereotype regarding the el-
y is that a certain amount of emo-
al instability, forgetfulness, depression
withdrawal is normal and therefore
s not warrant medical intervention,"
s Dr. Eric Pfeiffer, a Duke psychia-
. "On the contrary, early treatment
ht prevent deterioration or institu-
alization, or both."

The Time It Takes

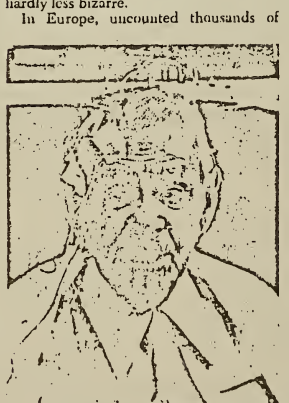
light now, the number of researchers
king to control the aging process is
ll. A major reason for this is that ex-
imentation in aging takes a great
l of time—while the subjects are ag-
. "One experiment on a mouse can
e up to three years," says Dr. Nathan
Shock, chief of Baltimore's Geron-
gy Research Center of the National
titute of Child Health and Human
velopment. But recently, the prospects
e gotten brighter. Funds for aging
earch at Shock's center have risen
n $9 million in 1971 to $12.3 million
ye d proposals are before Con-
ss to set up a separate National Insti-
e on Aging Research.
rom time immemorial, the quest for
ys to prolong life or recapture lost


Allan Dean Walker

Fitness class: A good way to increase heart function and reduce tension

youth have been a staple of myth and folklore. King David indulged in geriatric-therapy—the practice of sleeping with young virgins in order to absorb revitalizing emanations from their bodies—a treatment that, if it did nothing else, certainly kept him from feeling lonely. Achilles consumed the marrow of young bears to increase his strength and courage, and the Indian physician Susruta in 800 B.C. advised impotent patients to eat the testes of tigers. Even today, rejuvenation specialists conduct thriving practices—sometimes using techniques that are hardly less bizarre.

In Europe, uncounted thousands of


Robert H. Nelson—Newsweek

Measuring brain waves at Duke

men and women regularly submit to cell-therapy treatments, devised by the late Dr. Paul Niehans of Switzerland. The treatments usually involve injections of tissue extracts from fetal lambs on the theory that they restore function to failing organs and have a generally "revitalizing" effect on the body. The vogue for cell therapy, particularly among members of the jet set, was much enhanced by reports that Niehans had personally treated such figures as Pope Pius XII, the Duke and Duchess of Windsor, Gloria Swanson, Bernard Baruch, Charlie Chaplin and Winston Churchill.

Niehans's clinic, La Prairie, is an elegant mansion on the shores of Lake Geneva; it thrives today under the direction of Dr. Walter Michel. The fetal cells come from a flock of 500 specially bred black sheep pastured on a lush farm in the canton of Fribourg. Patients usually spend eight days at the 23-bed clinic, and a course of treatments consisting of eight injections costs $2,000. Michel estimates that there are more than 5,000 cell-therapy practitioners in Europe.

In the village of Lenggries, deep in the foothills of the Bavarian Alps, Dr. Siegfried Block runs a 40-bed clinic modeled after Niehans's. A six-day course of treatment costs from $1,300 to $1,600. Dr. René-Basile Henry, who conducts a flourishing cell-therapy practice in the Paris suburb of Saint-Germain-en-Laye, charges only $100 to $600.

The cell therapists claim to be able to cure a staggering range of infirmities, from mental retardation to emphysema. The cell therapists insist that the injections revitalize the bodies and minds of the elderly. But for all the claims made on their behalf, most researchers dis-

The rejuvenators: Sheep for cell therapy, Aslan with Gerovital patient

ount the cell-therapy treatments on the round that so far no scientifically con-rolled studies have been carried out to upport them.

Other enthusiastic claims are also be-ng made for a product called Gerovital, drug composed largely of the standard nesthetic procaine and developed more han twenty years ago by Dr. Ana Aslan f Bucharest. Procaine is best known to Americans under the trade name Novo-ain. Aslan claims that her compound s effective in the treatment of arthritis, rteriosclerosis and the general debilities old age. Nikita Khrushchev was one Aslan's most enthusiastic patients. He aid that Gerovital made him feel more obust. Sukarno, Ho Chi Minh and Mar-ene Dietrich are said to have also re-eived Aslan's treatments.

Interestingly enough, though most re-searchers are just as skeptical about Gerovital as they are about the Niehans cell therapy, there are signs that the drug may yet find a place in medicine. This is because there is some evidence that the compound acts as an anti-depressant. Dr. Nathan S. Kline of Rockland State Hospital in Orangeburg, N.Y., is currently testing Gerovital in elderly patients with mild to moderate depression. On a recent visit to the U.S. to discuss the tests, Dr. Aslan, a robust 78, was honored at a dinner attended by Food and Drug Administration director Charles C. Edwards and Sen. Ernest Hollings, who had some questions about the drug. "Now for you," she told Hollings, who is 51, "it would take a pill at breakfast and one at lunch for twelve days. Then you'd wait three weeks and begin again."

There's No Elixir

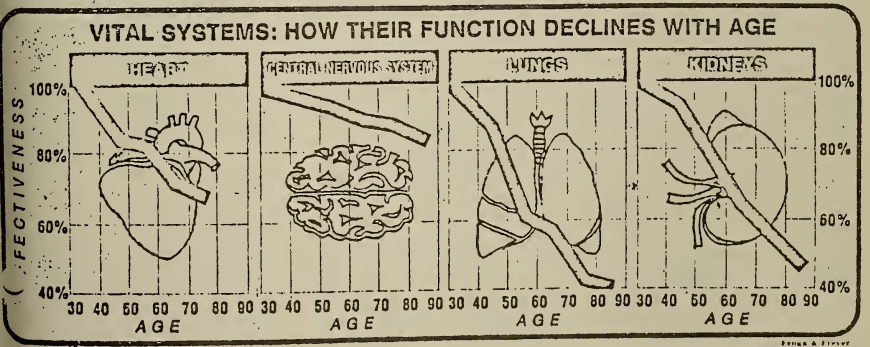
But though anything remotely resembling a true elixir of youth has yet to be found—and quite possibly never will be—a number of intriguing experiments suggest ways in which the aging process may eventually be controlled. As long ago as 1932, Dr. Clive M. McKay of Cornell showed that he could extend the life span of rats by one-third by cutting the calories in their diets. Whether calorie restriction would work for humans has not been tested. But the residents of the valley of Vilcabamba in Ecuador, noted for their longevity, subsist adequately on diets that contain half the calories of the average American diet.

The gerontologists are fascinated with such places as Vilcabamba—as well as with Abkhazia in the Soviet Republic of Georgia and Hunza in Kashmir, where living well beyond the age of 100 is also commonplace. The diets of the residents of Vilcabamba and Hunza are low in saturated fats—meat and dairy products account for less than 2 per cent of the calories consumed—and this, according to current medical opinion, should delay the onset of arteriosclerosis. All three areas are agrarian, and the residents are used to prolonged physical labor.

But what may be of equal importance in explaining their longevity is the attitude of these people themselves toward old age. Dr. Alexander Leaf of Harvard Medical School, who recently spent two years visiting the three regions, reports that the elderly are held in high esteem and that even those over 100 still perform such essential duties as tending flocks, cleaning houses or caring for grandchildren. There is no such thing as retirement, and the old people themselves stress the importance of maintaining a calm, worry-free state of mind. One result of this, Leaf noted, is that the people expect to live a long time and regard 100 as quite a normal life span.

Another environmental factor long known to increase longevity, at least in cold-blooded creatures, is lowering the body temperature. UCLA's Walford has doubled the life span of the fish *Cynolebias* by reducing the temperature of its water 5 or 6 degrees. To Strehler, this and similar studies suggest that lowering human body temperature—perhaps by drugs—by only a degree or two could add an extra 25 to 30 years of life.

Some scientists think there is hope that a "youth factor" may someday be isolated. Several investigators have taken bits of skin from young mice and transplanted them to litter mates. As the transplant recipients aged, the skin patches were removed and transplanted



a younger generation. Maintained in
's fashion, through successive genera-
ns, the grafts survived years longer
n the animals from which they were
ginally taken. In a similar experiment,
rmanent connections were made be-
e ~ie blood vessels of young and
l ~ -a procedure known as parabio-
. The young blood seemed to have a
uvenating effect on the older animals,
d they survived well beyond their ex-
ected life spans.

But whether it is achieved with pills,
tions or special diets, the eventual
ntrol of aging may depend on funda-
ntal research on the nature of the ag-
process itself. "The more we know about the underlying causes of aging," says NICHHD's Shock, "the more we are apt to be able to devise and introduce a drug or pill or experimental condition that can have an impact." Most researchers agree that there are probably many factors involved in aging, and that no single magic bullet will prove the answer.

One of the likeliest places to look for clues to the aging riddle is in the genes and chromosomes. It has long been axiomatic among gerontologists that longevity —or the lack of it—runs in families. In studies involving 2,000 sets of twins over the age of 60, Dr. Lissy F. Jarvik of UCLA found that identical twins have a "significantly" greater similarity in life spans than non-identical twins have.

Since most species seem to have a finite life span—10 days for fruit flies, three years for mice, 110 for man—some doctors think there is a genetic clock built into the body's cells that determines when old age sets in. The best evidence to support their notion was discovered accidentally in 1961 by Dr. Leonard Hayflick of the Stanford University School of Medicine while he was doing cancer research on human cells growing in tissue culture.

Until then, most biologists had assumed that human cells growing in such cultures were essentially immortal, dividing indefinitely so long as they were pro-

TIPS ON HOW TO STAY YOUNG

ight now, there is no way directly to
slow down the aging process. But ex-
rts in the field agree on a number
common-sense steps that anyone can
e to encourage good health through-
adulthood—and perhaps even add
few extra years of vigorous produce-
e life.

Diet. Obesity has long been known to
orten life expectancy. Dr. Nathan
ock of the Gerontology Research Cen-
of the National Institute of Child
ealth and Human Development puts it
s way: "If you could suddenly wave
wand and eliminate all the obesity in
ulation, you'd be more likely to
~se life span than by almost any oth-
means." Keeping weight down, most
earchers agree, not only reduces the
ks of heart disease but may also pre-
nt diabetes common in the elderly.
pecially important is a reduction in ani-
l fats as well as starches and sweets in
e diet. Crash diets, however, are to be
oided at all costs since a sudden and
rp reduction in calories will force the
dy to break down irreplaceable mus-
tissue for energy.

Vitamins. There is no firm evidence
t taking the antioxidant vitamin E will
prove longevity. And amounts com-
only taken by vitamin enthusiasts—
re than one gram a day—might well
ve harmful over a long period of use.
. Denham Harman of the University of
braska advises those who wish to take
amin E on the off chance that it might
lp them stay young longer to take no
re than three to seven 100-milligram
sules a week.

Alcohol and Tobacco. In addition to its
nnection with lung cancer and heart
acks, cigarette smoking has been
ked to a shortened life. And there is
ent evidence that heavy smoking
n contributes to premature wrinkling
the skin, particularly around the eyes.
~ct may be due to insufficient cir-
~n in the skin, since nicotine is
own to constrict the capillaries. For
e same reason, smoking may also aggravate the circulatory problems that often accompany aging and increase discomfort in the hands and feet.

Alcohol has the opposite effect—dilating the small blood vessels near the skin —so many doctors advise their elderly patients to drink moderate amounts of wine each day. But with age, the liver becomes less efficient in breaking down alcohol. Thus, amounts that would be moderate during youth can become toxic in the later years.

Hormones. The ovaries reduce their production of estrogen at the menopause, and many physicians advise women patients to take estrogen pills. They believe that estrogen replacement therapy reduces such symptoms as hot flashes and the nervousness and irritability that often accompany the menopause. Estrogen also seems to retard the drying and wrinkling of the skin. Although administration of estrogen can produce cancer in animals, many endocrinologists insist that there is no evidence that estrogen therapy increases the risk of cancer in humans. And some doctors even believe the hormone may retard the development of cancer in elderly women.

Secretion of the male hormone, testosterone, doesn't diminish as sharply with age as does estrogen. Routine use of testosterone in men after middle age, therefore, isn't necessary. But in men who are clearly impotent because of a testosterone deficiency, the hormone can be of value.

Exercise. Keeping fit through regular exercise helps control weight and has a variety of other beneficial effects as well. In tests on a group of men between the ages of 52 and 88, Dr. Herbert A. deVries of the University of Southern California found that exercise increased oxygen-carrying capacity—the best single measure of vigor—reduced body fat and nervous tension and improved heart and blood-vessel function as well as arm strength.

DeVries's exercise program includes calisthenics, jogging and swimming. He

Allan Dean Weiner

DeVries testing exercise response

insists that the elderly begin exercising with caution and that a physician should prescribe the appropriate regimen "with the same care and certainty that he uses in choosing drugs for his patients."

Medical Care. Regular physical examinations are important since older people have fewer reserves to ward off infections and other ailments that younger people take in stride. Relatively minor complaints should be attended to before they develop into major problems that may prove too much for an older body.

Activity. The people who seem to weather old age the best and live longest seem to be the ones who have planned ahead. A person should not regard as inevitable the prospect of a useless and lonely old age. Instead, he should plan on useful and satisfying activities for his post-retirement years and maintain strong links to friends and family.

John Launois—Black Star

Keep busy: Abkhazian woman of 130

vided with adequate nutrients. But while observing cells cultured from the lung tissue of a human embryo, Hayflick was surprised to note that each cell population doubled about 50 times—and then stopped. Next he discovered that cell colonies put in the deep freeze after, say, twenty doublings would "remember" how many they had left when thawed and stop after 30 more. Hayflick then found that cells cultured from adult lung tissue undergo an average of only twenty doublings.

Despite his tentative evidence in support of a built-in cellular clock, Hayflick doesn't think humans age because their cells just stop doubling. For one thing, Hayflick points out, a human being doesn't live long enough for his cell population to double the maximum 50 times anyway. What Hayflick thinks is that aging involves biochemical, physiological and structural changes in the cell that occur before division ceases. But the hypothetical genetic clock that stops cell division, he notes, could play a major part in bringing about these changes.

Two Main Theories

The explosion of knowledge in the field of molecular biology in the past two decades has afforded many new clues about how genes affect the aging process. There are two main theories: the first is that the program spelled out at conception in the DNA, or genetic material, simply runs out, like the tape recording of a Bach concerto, and that cell function then ceases. The second hypothesis is that errors occur in the repeated copying of the genetic message, like the nicks that build up on a frequently played phonograph record. An accumulation of such mishaps could cause an "error catastrophe" that would bring the cell's functions to a halt.

Currently, Hayflick is devising an ingenious series of experiments to see whether the finite doubling of cells is determined by the DNA in the nucleus or by RNA—the nucleic acid that carries out DNA's genetic instructions—or other chemical transactions in the cytoplasm outside the nucleus. He is removing the nuclei from certain cells and "fusing" them with other whole cells, combining cells of long-lived species with those of shorter-lived ones, and young cells with old. If an old cell continues to double beyond its normal limit after fusion with young cytoplasm, it would suggest that the genetic control important for division resides outside the nucleus. If such is the case, it would have important implications, since the cytoplasm would be a far easier target for drugs or chemicals for the control of aging than would the nucleus.

Along with the genetic and psychological approaches to the problem, scientists are exploring a number of other fascinating avenues of research on the aging process and how it might be controlled. The most important:

■ **Pacemakers.** Some experts think that aging is controlled by specific "pacemakers" in the body, and not necessarily within each individual cell. The long survival of skin transplanted to successive generations of young mice, they say, suggests that some kind of hormone or "youth factor" has taken control of the implanted cells. And there is the fact that the wrinkling skin and thinning bones that sometimes occur in women after menopause is the result of diminished secretions of estrogen from the ovaries. To some extent, these signs of aging can be alleviated by administration of estrogens on a daily basis.

The major aging agent, according to Dr. Caleb E. Finch of USC, may be the hypothalamus, deep inside the brain. In mice, Finch has found that changes in levels of such nerve hormones as noradrenaline coincide notably with age. He suspects such changes could affect the nearby pituitary gland, the body's master endocrine regulator, affecting, in turn, the other endocrine glands throughout the body, including the adrenals, ovaries and testes. In the future, he suggests, "we ought to be able to take a couple of milliliters of blood from a person, run tests to see what his hormone levels are, then give him a cocktail of juices to remedy some of the imbalances involved in aging."

■ **The Brain.** An outstanding symptom of aging is senile dementia—the impairment of reasoning and conceptualization that can sometimes border on psychosis. Dr. F. Marott Sinex of Boston University thinks impairment of chemical transmissions of nerve impulses within the brain may account for the disorder. "Things are not packaged as well," he says. "Chemical mediators need cleaning up." Drugs or chemicals, Sinex suggests, may be devised to carry out the required biochemical housecleaning in the brain cells.

At the Center for the Study of Aging and Human Development at Duke University, Dr. Ewald W. Busse has detected diminished electrical activity of the brain in elderly persons as recorded on the electroencephalogram. The changes were particularly marked with respect to the so-called alpha waves that are associated with a state of "relaxed awareness." Interestingly, Busse discovered that beta waves (usually associated with arousal) are more pronounced among women than among men, a finding that suggests to him a possible connection to the longer female life span.

■ **Antibodies.** There is also fresh evidence that people grow old partly because of a derangement in the body's immune system. Antibodies and specialized white cells produced by the immune system are intended to recognize and attack invading viruses and bacteria and, some investigators suspect, detect and destroy incipient cancer cells arising in the body. But somehow with age, the system seems to lose the ability to distinguish between friend and foe. Dr. Roy Walford reports that the production of disease-fighting antibodies declines with age but that the level of autoantibodies, which attack the host's tissues, goes up.

An approach to correcting immune defects in aging is suggested by Dr. Takashi Makinodan of the National Institute of Child Health and Human Development. Makinodan exposed young mice to bacteria, inducing them to develop disease-fighting lymphocytes. When older animals were inoculated with the young cells, he found that they were able to resist lethal doses of bacteria for as long as six months. Perhaps, Makinodan says, humans could deposit their lymphoid cells in frozen storage during youth and use them in old age to similarly revitalize their immune systems.

■ **Free Radicals.** A further prime suspect in the aging process is a class of substances called free radicals. These are fragments of molecules that have come unstuck and avidly seek new substances

Lenz with patient

with which to combine. Such oxidative reactions involving free radicals are the reason butter turns rancid and oil-based paints dry. Dr. Denham Harman of the University of Nebraska has found that the administration of "antioxidant" chemicals extends the average life span of mice by as much as 50 per cent. Vitamin E, widely touted by food faddists, is an antioxidant, but has so far shown little effect in improving the life span in Harman's animal experiments, though Harman thinks that vitamin E or other antioxidants may ultimately prove useful in extending life in man.

But drugs, diet, and the manipulation of genes represent only part of the arsenal in the fight against old age. The investigators at Duke emphasize the profound influence of psychological attitudes on how well a person fares in his later years. A high "happiness" rating, they found, coincided with a longer life for the members of their study group. "Remaining active in some meaningful social role," says Dr. Erdman Palmore, "affected people's longevity on all three major levels—physical, psychological and social."

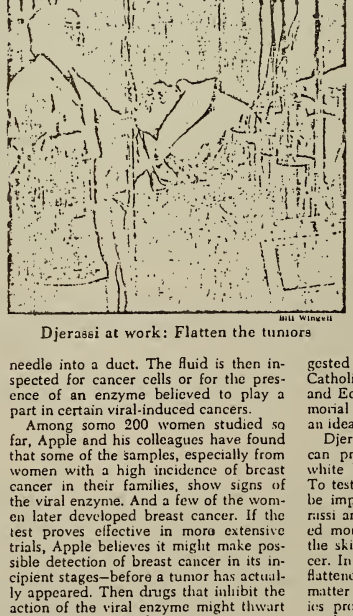
On the basis of their studies, the Duke researchers think a lot may depend on the attitude the individual forms about the prospect of old age during his early years. Those who lived longest were the ones who refused to give in. If widowed, they usually remarried. If retired, they took up hobbies. They took long walks and watched what they ate. And they took old age in stride. "The decision to have an active mental, physical and social life is really the important decision," says Dr. Eric Pfeiffer. "It's a yea-saying to life."

Cancer: The War Goes On

About half of the estimated 665,000 Americans who will be stricken with cancer this year can be cured by surgery, radiation and drug treatments—if the disease is detected early. The rest will die because medicine has yet to find the best way of diagnosing or treating the malignant disease that afflicts them. To gain ultimate control over cancer, and save more than 300,000 lives a year, researchers in laboratories across the country are pursuing scores of promising leads toward unlocking the secrets of the cancer cell and finding new ways to stop its uncontrolled and ultimately fatal growth. At the American Cancer Society's fifteenth annual seminar for science writers in Nogales, Ariz., last week, many top researchers in the battle against cancer described their progress. NEWSWEEK MEDICINE editor Matt Clark reports on highlights of the meeting:

Breast-Cancer Diagnosis. Breast cancer will kill more than 32,000 women in the U.S. this year and, despite the best efforts of physicians, the prospects won't improve much until methods of earlier detection are found. Fortunately, screening tests are becoming more widely available to find breast tumors at an early stage through special X-ray techniques and the measurement of heat emanating from hidden tumors. At the seminar, Dr. Martin Apple of the University of California Medical Center in San Francisco described preliminary studies of a test that might make it possible to spot women about to develop breast cancer.

The test, still in a highly preliminary stage of development, is based on recent evidence that a virus is associated with human breast cancer. For example, virus particles strongly resembling those known to cause breast cancer in mice have been found in the milk of women from families in which breast cancer has frequently occurred. In the test, a small amount of fluid is removed from the breast ducts—either by placing a suction cup over the nipple or by inserting a fine needle into a duct. The fluid is then inspected for cancer cells or for the presence of an enzyme believed to play a part in certain viral-induced cancers.



Bill Wingell

Djerassi at work: Flatten the tumors

Among some 200 women studied so far, Apple and his colleagues have found that some of the samples, especially from women with a high incidence of breast cancer in their families, show signs of the viral enzyme. And a few of the women later developed breast cancer. If the test proves effective in more extensive trials, Apple believes it might make possible detection of breast cancer in its incipient stages—before a tumor has actually appeared. Then drugs that inhibit the action of the viral enzyme might thwart development of the disease.

Viruses and Cancer. Some of the most convincing evidence to date that viruses can cause cancer in humans as well as experimental animals was reported by Dr. Elwin E. Fraley of the University of Minnesota School of Medicine. Fraley's research implicates a virus as a possible cause of cancers of the bladder and urinary system, which account for 10,000 deaths a year. He and his co-workers found virus particles in tumor tissue from twelve patients. Fluids from tumor cells growing in tissue cultures, Fraley found, caused malignant changes in both animal and human cells in tissue cultures.

Viruses are also strongly suspect in cancer of the cervix. And Dr. Ysolina M. Centifanto of the University of Florida School of Medicine reported evidence that the virus may be harbored in men and transmitted during intercourse. It is called herpes type II and is known to cause a venereal infection that produces genital sores. In recent years, researchers have found that many women who have had such infections seem to be far more likely to develop cervical cancer than those who haven't. Now Centifanto has found herpes II virus in the genital tracts of 15 per cent of a group of 263 men studied to date. In addition, she has discovered signs of the herpes virus in the tumor cells of two patients undergoing surgery for prostate cancer, suggesting that the virus may play a part in this type of cancer as well.

Cancer and Immunity. Researchers have long suspected that the body's immune system against bacteria and viruses is also its first line of defense against cancer, and investigators at many centers have been looking for ways to turn the cancer patient's apparently deficient immunity system back on. Key defenders in the immune system are the monocytes. These are cells produced in the bone marrow that travel through the blood stream and settle down in tissues as ameba-like macrophages waiting to engulf foreign invaders. The monocyte, suggested Drs. Isaac Djerassi of Mercy Catholic Medical Center, Darby, Pa., and Edmund Klein of Roswell Park Memorial Institute in Buffalo, could prove an ideal weapon against cancer.

Djerassi has devised a machine that can process normal blood and remove white blood cells, including monocytes. To test the notion that these cells might be important in combating cancer, Djerassi and Klein have injected concentrated monocytes into tumor nodules under the skin of patients with advanced cancer. In each instance, the tumor colonies flattened out and disappeared within a matter of hours or days. If further studies prove the importance of monocytes in the immune defense against cancer, Djerassi and Klein think ways might be found to turn a cancer patient's own monocytes against his tumor.

HEALTH CARE SERVICES

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HEALTH STATUS OF OLD PEOPLE*

How well are old people, and how likely are they to maintain health throughout old age? While not as healthy as the young, most are, for all practical purposes, quite healthy, and are likely to maintain this state of health until very near the end. Many members of the helping professions will find this statement difficult to accept. Why is this so?

Some will reject the claim because they themselves are illness-oriented. They define health as the absence of clinical pathology. Seen this way, old people are indeed sick, and the older they get, the sicker they become. Eighty-six percent of persons over 65 have at least one chronic condition. When one adds acute illness and accidental injuries, practically every old person has something wrong with him.

Other professional workers reject the statement because it contradicts their own experience. Most of the aged persons whom they are trying to help are ill, frail, disabled or dependent. They assume that their clients are typical of old people, but in reality they are atypical. The old do not usually turn to community agencies for help until they, their families and friends can no longer cope with a problem. By that time, the problem is serious, complicated and possibly beyond solution.

In this paper, health will be defined as the ability to function well enough to carry out normal roles and responsibilities in the community. This definition has several advantages. (a) it is relatively easy to determine how well people are functioning; (b) it directs attention to conditions within the individual or environment which, when corrected, will improve functioning; and (c) it seems to make sense to the aged themselves, if not to professionals.

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*Throughout this paper, old people will be called old people (not older people) or the aged (not the aging). Old age is, inescapably, the last stage in the life cycle. Euphemisms for the word "old" tacitly reinforce the belief that Old is Bad, and that Old Age is something to be avoided at all costs. Thus supposedly inoffensive terminology may actually help to rob age of the meaning and dignity it should have.

In these terms, old people seem to be pretty healthy after all. Our best source of data, the National Health Survey, * indicates that only 5% of persons over 65 are so ill or function so poorly that they must live in nursing homes, homes for the aged, mental hospitals or other institutions. Even at age 65, eight out of ten persons are still living in their own or relatives' homes, and not in institutions. But how well do the non-institutionalized aged function? Chronic or long-term conditions are the major source of disability for old persons, and 86% report at least one chronic condition. Yet only 15% of the non-institutionalized aged report that they are totally unable to work or keep house due to a chronic condition. An additional 27% can work, but are somewhat limited in the amount or kind of work or housework they can undertake. Even at age 75, only 24% are totally limited and 30% partially limited in work capacity because of chronic illness.

One additional measure of health is the number of days per year on which the person has restricted activity or is confined to bed. This measure of "disability days" counts all such days, whether due to chronic illness, acute illness or accidents. NHS statistics indicate that old people have more disability days than young or middle aged people. But even the old are, on the average, restricted in activity only 35 days per year, and are confined to bed on only 12 of these days.

All of these figures are based on self-reports by representative samples of old people. It is reasonable to assume that some old people have given exaggerated reports on their ability to function. Nevertheless, the figures are in startling contrast to the popular belief that the aged are feeble, unable to care for themselves or do anything productive, and are likely to end their lives in institutions.

Despite this encouraging view of the health of the aged, certain grim realities cannot be ignored:

(1) As a result of the normal aging process, strength, endurance and recuperative capacity decline; regulatory mechanisms affecting temperature control, balance and other functions become less eficient; and hearing, vision and other senses become less acute. People compensate for these losses to some extent, but they do increase susceptibility to illness and injury. Once ill or injured, the old person takes longer to recover, and needs more help.

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* For over a decade, the U.S. Public Health Service has been carrying out a continuing series of studies of the health of the American population. Many professional workers are unfamiliar with this gold mine of information. For a complete list of study reports (or to inquire about problems of special interest) write to the National Center for Health Statistics, U.S. Public Health Service, Washington, D.C. 20201.

(2) The extent and severity of chronic illness do increase with age, and accidents cause more disability among the old. As a result, a substantial number of old people are ill and incapacitated. More than 2.5 million old people are completely unable to work or keep house because of chronic conditions, and over four million have some restriction on their working ability. More than half a million are confined to nursing and personal care homes, and about 170,000 are in mental hospitals.

(3) Many old people who are now functioning reasonably well can easily become incapacitated if subjected to illness, injury or other severe or prolonged stress. For such people, preventive measures are of prime importance.

MAJOR HEALTH PROBLEMS

We will consider two types of health problems, i.e. (1) the main causes of death and disability; and (2) the barriers which stand in the way of maintenance of health and control of illness.

(1) Main Causes of Death and Disability

Three-fourths of all deaths among persons over 65 are due to heart disease, stroke and cancer. Diseases of the heart are by far the most important cause of death. Within this category, arteriosclerotic heart disease (including coronary heart disease) claims the greatest number of victims. The following table list the five leading causes:

Causes of Death for Persons 65 and Over, U. S., 1963

Cause	Percent of Deaths Due to that Cause
Diseases of the Heart	46%
Strokes	15
Cancer	14
Influenza and Pneumonia	4
General Arteriosclerosis	3
All other causes	18
Total	100%

Source: National Center for Health Statistics. The Facts of Life and Death. Washington: U.S. Government Printing Office, 1965.

Heart conditions and arthritis and rheumatism casue the greatest amount of disability, as the following table shows:

Percent of Non-Institutionalized Persons 65 and Over Limited in Activity Due to Chronic Conditions, U.S., July 1961 - June 1963

Condition	Percent of Old People Who are Limited as a Result of That Condition
Heart Conditions	11%
Arthritis and Rheumatism	10%
Orthopedic Impairments (excluding paralysis or absence of arms, legs, back, spine or hips)	6%
Visual Impairments	5%
High Blood Pressure	4%
Mental and Nervous Conditions; Strokes	3% each
Asthma and Hay Fever; Hernia, Genitourinary Conditions; Paralysis	2% each
Diabetes; Varicose Veins; Chronic Sinusitis and Bronchitis; Hearing Impairments	1% each
Tuberculosis; Neoplasms (Cancers): Hemorrhoids; Peptic Ulcer	less than 1% each

Source: National Center for Health Statistics. Chronic Conditions and Activity Limitation, United States, July 1961 - June 1963. Washington: U.S. Government Printing Office, May 1965. Recomputed from Table 3.

Accidental injuries are also an important health problems. Although they are less likely to be injured than younger groups, the old are more severly disabled when accidents do occur. NHS estimates (1959-61) indicate

that on any given day, approximately two million aged people experience the effects of injuries, two-thirds of which occur in the home.

(2) Potential Barriers to Maintenance of Health and Control of Illness

"Potential" barriers become "real" to the extent that the old lack the skills or energy needed to overcome them, and communities fail to provide necessary help. Barriers (a) within old people; (b) within health professionals; (c) within the health care system; and (d) within society, may keep the aged from obtaining health services.

(a) Within Old People

Some aged people believe that symptoms of illness are normal and inevitable results of aging and therefore do not seek help. Others are aware of their need for help but lack the knowledge or energy required to reach available services. The poor and poorly educated lack skills needed to manipulate the System to their advantage. When seeking help, the presence of several chronic conditions (complicated by age-related losses) is apt to make diagnosis and treatment difficult. Many old people also find it hard to communicate with health professionals. This is partly the result of confusion about symptoms and partly due to social class differences between professional and patient.

(b) Within the Health Professions

Health professionals in general (and especially physicians) are oriented toward acute illness or the acute phase of chronic disease, and have limited experience in management of long-term conditions. Some feel that they have little to learn from an old patient and that they can't do much about his problems. Increasing demands for health care results in more pressure upon practitioners, who in turn give low priority to the needs of the aged. Unless especially sensitive or experienced, the health professional may ignore important social, psychological, vocational and avocational needs of the patient or his family. Many physicians feel that such needs are outside their sphere of competence and do not know how to obtain help elsewhere.

(c) Within the Health Care System

The term "health care system" suggests that most areas have an integrated network of health services and facilities and someone doing planning to meet health needs of the population. Nothing could be further from the truth. Disorder within our health "system" threatens and inconveniences all users of health care, but is particularly hard on the old patient, whose health needs are diverse and whose resources for coping with The System are limited.

Most communities contain many services and facilities which offer potential aid to the aged person. Yet few have any mechanisms for assessing patient or family needs; determining how and where such needs can best be met; helping people obtain the appropriate services. Some practitioners are willing and able to perform these time-consuming "medical Management" functions, but many are not. Therefore the patient or a family member must take on the functions. Few patients or families have training or experience to handle the task competently.

The autonomy of providers of care is another barrier. Most agencies are independently administered and the linkage between them are fragile or nonexistent. Because old people need a variety of services, they must knock on many doors to obtain help. If the old person receives care from two or more sources, he will be treated by two or more staffs. The objectives of one may bear little relationship to those of another agency, or may even conflict.

Many health agencies define their mission in a rigid, narrow fashion and vigorously defend their territory against real or imagined encroachment by others. Under these conditions, agencies may refuse to make necessary referrals, or may extend or discontinue services capriciously, without regard to what others are doing or what the community needs. Responses of this sort have their greatest effect on patients who require complex, carefully developed service arrangements over long periods of time.

Fragmentation of information about the patient often occurs when he receives service from different agencies. The person may have as many records as he has agency contracts, and no one record contains a complete picture of the individual or family. "Confidentiality" is sometimes an excuse for withholding information from agencies which are seen as competitors. This situation is particularly tragic for those who are physically, psychologically or socially unable to cope with everyday problems. Such people need protective services which are unobtainable in most communities today.

Finally, The System creates particular hardship for old people who are found in disproportionate numbers in small towns and rural areas and the inner core of large cities. These are precisely the areas with the greatest shortages of health resources. Such shortages occur because we lack effective mechanisms for allocating health resources on the basis of need.

(d) Within Society

The major social factor affecting access to health services is the generally low social valuation of the aged compared with other age groups.

When resources are scarce relative to demand (as they almost always are) aged persons and other low priority groups will be the last to receive them, especially if they do not form power blocs to protest. Negative social valuation is reinforced by the fact that many old people are not only old but also poor and ill educated, and thereby possess low social status.

Social valuation of the aged is reflected in their economic status. Since World War II, real income for most Americans has risen dramatically while that of the aged has crept forward. Despite some improvements in standards of living, the relative gap between old people and others has been increasing. In 1966, 30% of the aged (5.4 million people) were poor, and an additional 12% (2.3 million people) were on the borderline between the poverty and low-income levels of living.

Means of reducing or eliminating these barriers to care will be discussed at various points in this paper.

UTILIZATION OF HEALTH SERVICES

Many factors influence the extent of use of health resources by any segment of the population. These include the health status and needs of the group; availability and accessibility of resources; knowledge of an attitudes toward these services and facilities; beliefs about prevention and cure of illness; ability to meet the cost of care; the nature of the restrictions placed upon use of services by the providers; and the help which is available for making wise use of The System.

Currently there is a great interest in Medicare's impact on use of health services by the aged. Before 1966, about half of the aged had some sort of health insurance, but benefits were typically very limited. Nearly all old people are now covered under a relatively comprehensive plan which includes care in hospitals, extended care facilities and the home; outpatient diagnosis and treatment; physicians services; medical equipment; TB and psychiatric care; X-ray therapy and a number of other benefits. Hearing aids, glasses, drugs used at home, private rooms, private duty nurses and routine dental services are among the main items which are not covered. Payment for covered services has only been available since July 1966 (January 1967 for ECF care), and many areas of the country lack certain services which Medicare pays for. Thus the full impact of the legislation will not be felt for some time.

However, NHS data comparing the first year of the program (July 1966 - June 1967) with the previous year indicates that discharges of old people from general hospitals increased 11% in the year following enactment and

the average length of stay in the hospital increased 9%. On the other hand, the percent of old people who contracted a doctor at least once remained approximately the same, as did the number of contacts per person per year. In fact, doctor visits in the first year after Medicare dropped slightly, probably reflecting the low incidence of influenza and other acute conditions during 1966-67.

The figures just cited are consistent with the expectations of Social Security officials. They did not believe that there was a vast backlog of unmet medical need among the aged or that hospitals and doctors offices would be swamped as soon as Medicare payments became available. Nevertheless, overall use of health services by the aged may increase significantly as a full range of services becomes available throughout the country and as the aged become better informed consumers.

Even the immediate impact of Medicare should not be underestimated. The following statistics indicate what happened during the first year (1967) in which the full program was in operation:

Under Part A - Hospital Insurance

(a)	inpatient hospital care	5,215,631
(b)	outpatient hospital diagnostic service	562,295
(c)	home health services	327,108
(d)	extended care facility care	740,000

Under Part B - Medical Insurance

(a)	physicians services	20,166,565
(b)	home health services	367,395
(c)	outpatient hospital services	2,546,858
(d)	independent laboratory charges	339,512
(e)	all other services	655,235

All told, Medicare paid over $1 million claims and bills, at a cost of more than 4.5 billion dollars. Medicare therefore promotes utilization of health services in two ways: (1) it provides the funds with which old people can purchase various health services, and (a) it encourages practitioners and agencies to expand or develop new services, since financing for at least part of their clientele is permanently assured.

WHAT TYPES OF HEALTH SERVICES DO OLD PEOPLE NEED?

In general, such services should be comprehensive, coordinated, and continuous.

Comprehensiveness means that a total range of services is available and accessible to meet all known needs of the old person and his family. These include (a) health promotion, (b) prevention and detection of illness, (c) ambulatory care, (d) hospital and other institutional care, and (e) home care. They also include (f) evaluation of the patient's status and needs, (g) counseling and referral to sources of help, and (h) continuing surveillance so that care plans change as needs change. In addition, they should include (i) help in restructuring family, job and avocational plans and (j) emotional support over the months or years that illness or disability persist.

Coordination means that services are assembled into an appropriate package for each individual. When several agencies are involved, it is sometimes difficult to reach full agreement on what the package should contain. Other problems arise when the person in charge (normally a physician) understand some patient and family needs but ignores others. Planners of care create additional problems by trying to fit the needs of the patient to the resources they are familiar with instead of finding resources to fit needs.

Continuity means that services are provided without interruption. Continuity should be assured whether patients are brought to services or vice versa; whether one receives all services from a single agency or a number of agencies; and whether care if financed through one or several sources.

All people need care which is comprehensive, coordinated and continuous. Elderly, long-term patients need it more than most.

Health Promotion and Prevention of Illness and Disability

Services in this area should aim at the following goals:

1. that old people maintain or develop healthful living habits

2. that potential sources of illness and injury be removed from their environments, if possible.

3. that if health and safety hazards cannot be removed from the environment, the aged should be protected against such hazards. If the hazards are especially severe, the old should be transferred to less hazardous surroundings.

MAINTAINING OR DEVELOPING HEALTHFUL HABITS

The following habits are important to health maintenance in old age:

(a) eating in such a way as to meet all nutritional requirements while avoiding overweight. (Such a diet reduces the risk of heart disease and anemia; retards disease processes in such conditions as diabetes and peptic ulcer; builds energy reserve to cope with stress; and facilitates rehabilitation.)

(b) exercising regularly to maintain full functioning capacity. (Regular exercise increases muscular strength; increase the efficiency of the circulatory, digestive and respiratory systems; helps keep weight down; and dissipates tensions.)

(c) getting enough rest to wake refreshed and function well throughout the day. (Shortage of rest affects timing and coordination, and may increase irritability or depression and lowers resistance to stress.)

(d) correcting minor defects which could reduce ability to walk, talk, eat, see or hear. (Frequent professional examination of the feet, mouth, eyes and ears; proper hygiene; and use of well-fitted shoes, dentures, glasses and hearing aids all will help.)

(e) avoid, or if necessary eliminate, cigarette smoking. (Smoking has been shown to increase the risk of heart disease, lung cancer and a number of respiratory ailments.)

Removing Potential Sources of Illness or Injury from the Environment

(a) Environment includes the immediate environment of the home as well as the larger social environment. Approximately 2/3 of all accidents among the aged occur within the home. Falls are by far the most important cause of injury followed by burns and poisons. Many home accidents could be prevented by fairly simple changes in the structure or arrangements of the home. The difficulty lies in convincing millions of old people to make such changes. Home safety inspections by firemen, building officials or neighborhood aides might help sensitize old people to home hazards. Groups or classes on home safety might also be helpful.

(b) Air pollution and unsafe crossing zones on busy streets are two types of social hazards the removal of which would benefit old people. Heavily polluted air has been shown to cause excessive illness and death among the old; poorly regulated traffic strikes down the old as well as the young. Banning the sale of cigarettes or of high caloric--high cholesterol foods sounds like an effective way to remove hazardous substances from the environment. However it is unlikely that the public, the politicians or the professionals would accept such a solution!

Protecting the Aged Against Hazards or Transferring Them to a Less Hazardous Environment

Within the home, increasing illumination levels; using large readable labels on containers of hazardous products; and keeping electrical and gas equipment in good repair, all serve to protect the old against hazards. Installation of air conditioning can also be beneficial; recent studies of heat waves show the aged to be the major victims.

If houses are too hazardous, it may be better to move the old into housing especially designed to reduce the risks and stresses found in many large, old homes.

Aged drivers can improve their changes by avoiding congested high-speed freeways or using them only when traffic is light. Innoculation against influenza is a specific method of protecting the old against an important health hazard. Weight control; lowering of cholesterol and blood pressure levels; elimination of smoking; and increased exercise are more general ways of reducing the risk of heart disease. Likewise moving from areas with heavy air pollution may lower the chances of developing respiratory conditions.

Needless to say, these activities are only illustrations of what can be done, and do not constitute a complete program.

A final word about habits. Eating, exercise and smoking are usually regarded as highly personal matters for which the individual (not society) is responsible. Yet many people need social support to develop or maintain good health habits. TOPS, Weight Watchers and similar groups help overnourished persons, and fat old people should be encouraged to join. Group eating arrangements at senior centers, housing projects, churches and within individual neighborhood homes* help the aged who

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*The "neighborhood kitchen" is one imaginative approach to the problem of nutritional deficits. This idea originated at the Grace Hill Settlement House in St. Louis. The plan is to find women who can prepare food for 15 or 20 neighbors in their own kitchens. The cook may be old, young or middle-aged, but must be able to purchase and prepare the food herself. Typically, 15 out of 20 meals would be consumed on the premises and the other five delivered by a local resident, for example, a Neighborhood Youth Worker, or an old person who is capable of such service. This approach does not require elaborate organization and uses existing resources in an effective fashion. By locating kitchens in each neighborhood, it is possible to cover an entire small city or key sections of a larger city in relatively short order. Because meal service is neighborhood-based, the cook and the diners may have similar backgrounds and food preferences. Instead of a standardized menu, the diners are more likely to get the kind of food that they are accustomed to and enjoy.

have nutritional deficits, as do the more traditional household help and home meals arrangements. If the old lack exercise, the community can organize exercise and sports clubs at Ys, recreation departments and senior centers. Pressure on local government to create protected areas for hiking and cycling and to improve other recreation facilities can be helpful. Promotion of anti-smoking clinics and therapy groups is another worthwhile project.

Detection of Illness

Many health workers believe that early detection (or case finding) followed by correct diagnosis and prompt treatment reduces the likelihood that a disease will lead to disability or death. How "early" is "early"? This varies from one condition to another. The aim is to alter the course of the disease while it is still possible to do some good. Usually this requires that the condition be discovered prior to the time when the average person becomes sufficiently alarmed by symptoms to go to a doctor.

Three principal methods of early detection are: (a) periodic health exams, (b) screening and (c) sensitizing people to symptoms.

(a) Periodic Health Exams. Such exams include a health history, physical examination and whatever laboratory work the physician feels is indicated. The physician gives the physical, interprets findings and gives whatever instructions he feels are necessary. He may take the history, but usually a nurse or secretary will do this, or the patient will fill out a self-administered history form himself. The laboratory work is done by technicians. The nature of the exam, the time it takes and its cost vary enormously from one physician to another. Persons over 40 are often urged to have an exam once a year.

Periodic exams have their greatest value when they are truly comprehensive and are done by the same physician throughout the person's lifetime. Under these circumstances, the physician has a baseline (what the old person was like as a young and middle-aged adult) and an accumulation of data on which to base judgements. However relatively few adults have regular exams, and they are rarely of the ideal type just suggested. They are costly; not covered by insurance; require a great deal of scarce physician time; and are regarded as unnecessary by many people.

(b) Screening. This is the use of simple tests and procedures for rapidly discovering signs of illness in large populations. Theoretically, at least, screenees should be unaware of the presence of illness, and should believe that they are in good health. Screening can be for one condition (e.g., the traditional chest X-ray for TB) or for several (e.g., abnormalities of the blood; heart trouble, TB and lung cancer; diabetes; and

glaucoma). The latter are called "multiple" or "multiphasic" screening programs. The more advanced multiphasic operations test for 15, 20 or more conditions; use atuomated equipment to analyze blood, urine and other specimens; and feed data directly into computers for interpretation. Technicians do the work although physicians usually decide which screenees have "suspicious" enough test results to be sent to their own physicians for definitive diagnostic studies.

Screening has the virtues of being fast, inexpensive, applicable on a mass basis, and require little medical manpower. The technique has many enthusiastic proponents.

Screening also has two major difficulties: (a) a number of the most serious chronic conditions (e. g., arteriosclerosis, osteoarthritis) cannot be detected by any known screening tests; and (b) it has not been scientifically established that most existing screening programs lead to significantly reduced disability or death rates. A recent authoritative review published by the World Health Organization states that screening is of proven value for only a limited number of conditions. It recommends that adult screening programs be confined to testing for anemia, cataracts, otitis, rheumatoid arthritis, hernia, TB, overweight and cancer of the uterus, bladder, skin and mouth.

(c) Sensitizing People to Symptoms. Another approach is to publicize sets of symptoms which may indicate the presence of certain diseases; familiarize people with these symptoms; and urge them to seek medical attention promptly if one or more symptoms appear. The most extensive, and oldest, symptoms campaign centered around cancer's "Seven Danger Signals". This public education program began in 1936 and has been carried on more or less continuously since that time. Even now, however, relatively few people are able to correctly name all seven signals.

The basic shortcomings of the "danger signals" approach are (a) the confusion likely to ensue if the public was expected to remember symptoms of even half a dozen serious diseases; and (b) the fact that by the time symptoms are apparent to the patient, a disease (e.g., breast cancer) may already be beyond the early stage. Then too, (c) knowledge of symptoms is rarely enough to motivate people to action. They must also believe that the condition could actucally have serious consequences for them; that it really can be detected; and that by taking certain recommended actions, they will reduce the risk of becoming seriously ill. A break in this chain of beliefs at any point may be enough to keep the patient from seeing a doctor.

Under the circumstances, what advice should be given old people with regard to early detection of disease? If possible they should find some

physician, medical group or agency willing to take responsibility for continuing surveillance of health. Surveillance ideally includes exams or screening; health information; review of symptoms presented by the patient or discovered on examination; diagnosis; treatment, and if necessary, planning for long-term care. Other than certain dedicated physicians, it is difficult, if not impossible, to find someone to take such responsibilities in most communities. Possible sources include: large, prepaid group health plans found in certain metropolitan areas (which often have their own in and out-patient facilities as well as medical and paramedical staffs); private medical group practices (in which several medical specialist and generalists offer their services on a team basis); non-profit group health centers sponsored by unions, cooperatives and other organizations; "well-aging clinics" established by hospitals and health departments; and neighborhood health centers for the poor sponsored by local arms of the Office of Economic Opportunity.

AMBULATORY CARE

Even if prevention and detection systems were excellent (which they are not), illness would still occur and old people would need diagnosis and treatment. Ambulatory care is primarily diagnosis and treatment (with a little health promotion, prevention and detection thrown in) which is given in doctors' offices, clinics or group health settings. Aside from medical care provided in hospitals or other institutions, about two-thirds of all physician contacts with old people are at the doctor's office. Approximately nine percent of such contacts occur in hospital clinics and eight percent are by phone. Seventeen percent represent visits by doctors to the old person's home. Old people have approximately the same pattern of contact with physicians as the total population, with one important exception: physicians visit old people at home three times as often as any other age group!* (These statistics are based on 1963-64 data. It is not clear what impact--if any--Medicare may have on physicians' practices. However, by providing payment, the legislation does encourage doctors to visit patients at home and in extended care facilities, as well as in offices and hospitals.

To obtain care, the individual must be able to get to where it is given. Apparently, most old people manage to do so on their own, or with the help

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* This challenges the popular notion that doctors are most likely to make home calls when small children are involved. NHS figures show that only 4% of contacts between doctors and children under five years occurred in the home. On the other hand, mothers of small children frequently contact doctors by phone.

of relatives, friends, or taxi drivers. We really do not know how many old people are unable to reach doctors' offices or clinics because of physical limitations or transportation difficulties. Such people exist, but they are likely to be in the minority. Thus the problem is of manageable size. The solutions lie in expanding transportation services (e.g., the Red Cross); organizing driver pools through churches, women's organizations or senior centers; special arrangements with taxi companies for reduced fares during off-hours; and inducing bus companies to develop special routes for the aged. Physicians are now locating their offices in such a way as to be more accessible. Some jointly purchase an office building (which may also have a lab, pharmacy and other services on the premises), while others obtain space within, or adjacent to, a community general hospital. Locating public and private health agencies within a single building would help the client, and might improve inter-agency communication as well.

The main issues surrounding ambulatory care are quality and quantity. These have been discussed, in a somewhat different context, in the section on Barriers to Care. The points made need not be repeated. As already indicated, most old people receive most of their care in private physicians' offices. However, a few comments about hospital outpatient departments might be in order.

The traditional role of the OPD was provision of free care for the poor. Hospitals were motivated partly be community needs, and partly to provide training opportunities for medical students and young physicians. Patients were defined as "charity cases" and, all too often, afforded second-class care. The OPD contained a number of specialty clinics. Old people with several chronic conditions had to visit several different clinics, often on different days. The result was inconvenient and fragmented care. Under these circumstances, many sought treatment only for the most painful or obvious conditions or became discouraged and failed to return for follow-up appointments. Patients rarely had a single physician responsible for advising them or answering questions. Last but not least, the system made little provision for the dignity or comfort of the patient.

OPDs today serve all segments of the population. Progressive hospitals are developing outpatient programs that incorporate specialty clinics into a type of group medical clinic, with a single physician responsible for each patient. The aim is to give a personal touch to clinic care while improving quality of care.

The OEO - sponsored Neighborhood Health Center has emerged as another response to poor peropl's need for high quality, comprehensive care. Centers are supposed to provide preventive services; diagnosis

and treatment; rehabilitation; dental care; mental health counseling; drugs and appliances; ambulance service; and home care, for the entire family at one location. Centers attempt to induce other health and welfare agencies to deliver their services to neighborhood residents through the Center (rather than their own offices), and to share in funding the total program. Twenty centers are presently operating and federal funds have been obligated for 41 more. Federal officials claim that hundreds more are needed. To date, the Economic Opportunity program has devoted most of its resources to children, adolescents and young families. How much help these Centers will provide the aged poor remains to be seen.

Hospital Care

The general hospital is usually seen as a provider of maternity care and inpatient care for persons with serious, acute conditions. Yet the aged make heavy use of hospitals as they are hospitalized more often and stay longer than any other age group. Medicare coverage is sufficient to protect the old person in all but the most prolonged, hospitalized illness.

Hospitals today are becoming concerned with the entire spectrum of illness, from its earliest to its last stages. Stimulated in part by Medicare (which covers the full range of outpatient diagnosis and treatment), they are establishing screening and diagnostic services and rehabilitation departments. Despite encouragement by the American Hospital Association, only a small proportion of the Nation's more than 7,000 short-stay hospitals have established chronic disease or long-term care units.* Such units bring the hospital one step closer to the provision of comprehensive patient care. Progressive Patient Care plus (PPC) represent a second, long step in this direction. A hospital organized in this fashion contains various units, each designed to meet the needs of different types of patients at different stages of illness. As the patient's health status changes, he is moved to another unit for care. Instead of the usual medical, surgical and specialty areas, a PPC hospital would typically provide intensive care; intermediate care; continuing or long-term care, Self Care, and conventional obstetric and pediatrics units. Outpatient and home care services would also be available.

Affiliations and transfer agreements between institutions also foster more comprehensive, continuous care. Denominational hospitals and homes for the aged have had affiliations for many years. However most general

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* As of January 1967, for example, hospitals administered only 351 (23%) of the nation's 2,607 certified Extended Care Facilities. There were, of course, additional hospital chronic disease units which, for one reason or another, were not certified under the Medicare program.

hospitals are only beginning to develop such arrangements through the "transfer agreements" required by Medicare. Under these agreements, one or more hospitals and ECFs have formal arrangements for rapid transfer of patients and their records whenever necessary.

Some leaders in the hospital profession believe that these changes are just the beginning of the transformation of the acute hospital into a community health center, in which public and private health activities, acute, chronic and psychiatric care would be available on a single health campus. Whether this becomes the new pattern or not, the aged are likely to be among the chief beneficiaries of experimental approaches to the integration of health services.

Other Institutions

Institutions Which Care for the Mentally Ill Aged

What is the extent of mental disorder among the aged? There are no precise measures, but it is probably much less than professional workers or the public suppose. Mental hospital admission rates increase with age, as do mental illness rates developed through community surveys. Yet the evidence suggests that most old people are mentally competent, and they do not become irresponsible or befuddled in their last years.

Why do so many people believe that age brings mental illness and incompetence? The following are some of the bases for this belief:

(a) Previously unnoticed personality quirks may become evident in old age, especially since old people have less motivation to keep such quirks hidden (e.g., they no longer have to worry about holding a job).

(b) Some old people can't face the fact of aging, and try to retain youth in inappropriate ways which embarrass others (e.g., the aged coquette).

(c) Other old people seem to withdraw and take little interest in the world or even in their own families. Yet such "disengagement" is, for some, a perfectly healthy way of adjusting to age and the approach of death.

(d) Cranky, childish forgetful behavior may be seen as a "rational" way of gaining attention. Some chose this technique because society suggests to old people that this is how they are expected to behave.

(e) Malnutrition, organic diseases and defects, even sudden dislocation from familiar surroundings, may produce a behavioral response which looks like mental illness; correction of the precipitating condition often causes the "mental" symptoms to disappear.

Failure to understand the basis for "peculiar" or "disturbed" behavior sometimes results in placement in a mental hospital, nursing home or other institution, even though other treatment might be more effective.

Where are the mentally ill aged? Recent national studies indicate that there are almost as many old people with "mental disorders" in nursing and personal care homes as there are in mental hospitals. In 1963, there were approximately 167,000 old people in long-stay mental hospitals. In 1964, nursing and personal care homes contained 101,000 patients with mental disorders and 148,000 who were classified as senile.

Does institutionalization mean the end of the road for the aged? Not necessarily. A public Health Service report on Mental Disorders of the Aging indicates that response to treatment by patients 65 and over is virtually the same as for other age groups: a third recover or nearly recover; a third improve considerably; and a third remain the same or grow worse. The trick is to get treatment for the old, rather than custodial care.

What can be done to improve mental health of old people? The following should be of value:

(a) Mental health professionals should recognize the importance of non-medical people in dealing with the disorders of the aging, by providing them with information and support. Most old people with mental problems are not seen by psychiatrists or other physicians. They are seen by public health and welfare workers, policemen, lawyers, judges, clergymen and many others, who help as best they can. These "front line" workers need basic information, and easy access to mental health resources when problems arise which they cannot handle.

(b) Family members and physicians should give prompt and careful attention to physical illness, infections, sensory losses, diet, and sudden dislocations of the aged, since these may cause changes in behavior which resemble mental illness.

(c) Community mental health centers, family agencies and mental health outpatient clinics should devote a greater proportion of their resources

to services for the old.* Many clinicians have found that short-term counseling with the aged can have very beneficial results, especially when it centers around immediate situational problems. Counselors can do much good by helping the old person and his family resolve interpersonal, health, housing and financial problems without worrying about changing underlying personality structure or long-term behavior patterns. Some old people benefit from group group therapy. No new technique should be ignored, just because the person with the problem is old.

(d) Old people should not be placed in mental hospitals or other long-term institutions until they have been given a thorough evaluation at an appropriate center. Evaluation provides the opportunity to ask: Why does the old person behave as he does? Is he really mentally ill or is something else the matter? Can anything be done to correct this condition? Does he really need to go to the state mental hospital, nursing home or whatever other institution we had in mind for him? Why--what is our real aim in sending him there? What alternatives might better meet his needs and those of his family? Until these questions are answered, it is better not to institutionalize the old person, since institutionalization is a traumatic experience, and once inside, the person is less likely to ever re-establish a normal pattern of living again.

(e) Psychiatric units in general hospitals are often more appropriate places for treatment of the mentally ill aged than are long-term care institutions and should be used whenever possible. As of mid-1967, there were over 700 psychiatric units in general hospitals, and almost all of these were certified to provide services under Medicare. In fact, Medicare regulations encourage the use of such units in preference to custodial mental hospitals (old people are permitted a life-time maximum of 190 days of care in psychiatric hospitals, but this limit does not apply to care in psychiatric units of general hospitals). General hospitals are more likely to have the specialized medical resources which older people need, and are usually more accessible to friends and relatives. There is also less stigma and a greater sense of hopefulness associated with care in these institutions.

(f) Institutions which treat the mentally ill aged should consider use of milieu therapy in addition to other forms of treatment. Milieu therapy is based on the idea that institutionalization deprives a person of the basic social roles which identify him as a functioning

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* In its report on "Medicare and the Care of Mental Illness," the Social Security Administration indicates that only 2% of persons using outpatient services in psychiatric clinics were 65 or over.

person and which help make his behavior predictable, normal and socially acceptable. By restructuring the hospital environment in such a way as to re-create sex, work and friendship roles, the patient is helped to develop a new view of himself and his behavior tends to improve. Long-term patients are sometimes so changed through participation in Milieu therapy that they are able to return to the community.

Extended, Nursing and Personal Care Facilities

These facilities offer care and protection from the stresses of independent living when the aged become too ill, frail or dependent to manage on their own, and when family members cannot or will not assume such responsibilities. These facilities vary enormously in their objectives, their names, ownership and administration, bed capacity, staffing, services, quality and cost of care. NHS studies carried out in 1963 provide the following picture of the nation's old age institutions and their patients prior to Medicare:

1. There were 17,098 institutions for the aged and chronically ill in the U.S. (This excludes an unkown number of very small, unlicensed homes; there are probably thousands of such homes which care for one or several old people.) Of these 7,843 were nursing care homes (where the primary service was nursing); 4,968 were personal care homes with some nursing; 3,568 were essentially personal care homes; and 728 were chronic disease hospitals or chronic disease units in general hospitals.*

2. Seventy-nine percent of these institutions were proprietary (privately owned, for profit); 14% non-profit; and 7% government owned. Non-profit institutions were usually homes or hospitals for the aged. Governmental facilities included state and county hospitals and sanitoria, other than mental hospitals.

3. The average institution contained 39 beds, and only 6% had 100 or more beds. However size of institution varied with ownership and type of service. For example, proprietary institutions averaged 26 beds, non-profit facilities, 66 beds, and government institutions, 126 beds.

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* "Nursing care homes" are usually (but not always) called nursing or convalescent homes; "personal care homes" are sometimes called rest or domiciliary care homes, residential care homes or custodial care homes; "chronic disease" facilities may be called geriatric, chronic or long-term care units, or may be identified with a specific condition such as alcoholism, tuberculosis or orthopedic impairments. The term congregate care facilities is also becoming fashionable but it is not clear whether it is here to stay!

4. Only forty percent of institutions employed a full-time R. N. to supervise nursing care; full-time R. N. s were in charge in one-third of the proprietary nursing and personal care homes, compared with one-half of the homes operated by government and non-profit organizations.

5. There were 505,000 residents in the nation's nursing and personal care homes (i. c., all but the 728 chronic disease hospitals and hospital units), of whom 88% were aged 65 and over (average age, 77.6 years). Two-thirds were women, and 4% were non-white. Average length of stay (i.e., from the last admission to the date of the survey) was 3.0 years.

6. Residents in nursing and personal care homes were healthier than on might expect: over half were out of bed except at sleep or rest times; three-fourths were continent all or most of the time; half were always aware of their surroundings; and four-fifths had reasonably good hearing and vision.

7. Chronic disease hospitals and units in general hospitals contained 77,000 patients. These patients were slightly younger, there were more non-whites, and the proportion of women was somewhat lower, but otherwise they were very similar to residents of nursing and personal care homes.

Since the advent of Medicare, the patients have probably remained pretty much the same, while the institutions continued to change. Several specific types of facilities are discussed briefly, below.

Extended Care Facility

The ECF is a new type of facility created by the Medicare legislation. Its purpose is to provide short-term, skilled nursing and active, rehabilitation-oriented care for old people following discharge from the hospital. The basic orientation of the ECF is quite unlike that of the traditional nursing home, which still has a custodial flavor and a passive approach to care.

While the ECF emphasizes rehabilitation, the term has a somewhat different meaning than when applied to young people. For young people, rehabilitation usually means a return to the community, to school or to the job. For old people, it often means, essentially, prevention of further disability. The criterion for success is not return to "productivity," but the ability to care for one's own needs while making less demands on social resources. Presumably ECFs have the resources needed to bring about this type of rehabilitation. Under Medicare, however, patients are allowed only 100 days in an ECF. Once benefits are exhausted, some patients are

transferred to nursing homes or other institutions, while others remain, with care provided under the Medicaid Program. Discontinuity of care could have serious consequences, including loss of some of the gains in independence which occurred during rehabilitation.

There were 4,700 certified ECFs in the United States as of June 1968. This represents about a third of all facilities offering some nursing care in 1963.

Nursing and Personal Care Homes

It is hard to consider these are two separate types of facilities, since many homes offer a mixture of skilled nursing and room, board and assistance in activities of daily living (i.e., personal care). Also, state licensing laws often fail to adequately distinguish between facilities on the basis of the services which they offer. The rapid and recent growth of the nursing home industry adds to the confusion; half of the beds in licensed homes have been built within the past five years!

Most proprietary homes began as owner-operated businesses. Until the 1950's, owners had difficulty raising capital, and as a result homes tended to be small, family operations. Such homes found it difficult to hire qualified administrative and health workers and patient care remained at a relatively unsophisticated level. In addition to a lack of administrative, nursing and medical personnel, few homes employed social workers, nutritionists, rehabilitation specialist or recreation personnel. Many of the patients' basic social and psychological needs were neglected, while nursing and medical care remained at minimally acceptable levels. Today, however, there is evidence of real improvement in the quality of institutional care.

How are standards of care being improved? One such way is through licensing. During the 1950's most states passed laws requiring licensing of nursing homes. In the beginning, these laws set minimum physical standards for the buildings in which care was given. Yet even these standards were often ignored. Tragic as they were, catastrophic nursing home fires were the instrument for arousing public concern and insuring enforcement in several states. More recently, licensing laws have begun to include standards for nursing and other care, and require certain minimum qualifications for personnel. Very recently, the Federal laws were ammended to cover qualifications of nursing home administrators. By 1972, the states are required to establish minimum standards of training and experience for persons wishing to enter nursing home administration. This requirement will eventually contribute to improvement of patient care. Its immedicate impact, however, will be to create a tremendous demand for short and long-term training to help professionalise the nursing home occupation.

Accreditation is a second method for raising standards. Accreditation, unlike licensing, involves voluntary compliance with a set of standards which an industry or occupation sets for itself, or which are set by an impartial accrediting body. In January 1966, the Joint Commission on Accreditation of Hospitals agreed to serve as the accrediting body for nursing homes. The JCAH now recognizes three levels of facilities, which it calls Extended Care, Nursing Care and Resident Care Facilities.

Certification as an ECF under Medicare imposes still more quality standards on the institution. As indicated, a relatively small proportion of all nursing facilities are both willing and able to meet these standards.

Another approach is to devise more sophisticated systems for classifying old-age institutions. Such systems should take into account (a) the intensity and amount of service and (b) the quality of care provided. Rates for payment for care of welfare recipients should be set in such a way as to reflect differences in both intensity and quality of care. Thus, for example, a traditional, two-category system (e.g., nursing homes and personal care homes) might be replaced by a system which recognized three levels of intensity of care and three levels of quality of care:

	Quality		
Intensity	Acceptable	Good	Excellent
Restorative care	1	2	3
Nursing Care	4	5	6
Personal Care	7	8	9

The new system would have nine categories of facilities, each with a different designation and rate of payment. In addition to its impact on quality of care, such a system would help old people and those responsible for placing the aged in institutions. Many consumers are now unable to distinguish between institutions or select the most suitable one for a particular person.

The State of Connecticut has taken leadership in developing better classification systems, but other states are beginning to follow suit.

Homes for the Aged

Traditional homes for the aged were non-profit institutions sponsored by churches or fraternal organizations. They literally served as homes for

old people who, though physically well, were socially dependent and unable to maintain themselves. In some instances, orphans and old people were cared for together.

Although the traditional type still exists, most homes have either become (a) medical facilities for the physically or mentally ill, or (b) parts of larger institutional complexes which are designed to meet a wide range of needs. New names indicate the new functions which homes for the aged have assumed. A number of homes have been renamed home and hospital, geriatric center, medical center or rehabilitation center.

The new institutional complexes often include a rehabilitation unit; several levels of nursing and personal care, including terminal care; apartments for the well-aged, and apartments or rooms for partically independent persons, together with common dining facilites and some supervision. Such a complex may also include a sheltered workshop; a day care center for frail or dependent persons who return to their own homes at night; and a senior center for well-aged community residents. Such institutions frequently are affiliated with universities or medical centers and foster research and training in addition to serving the aged.

Adult Foster and Boarding Homes

Adult foster homes serve people who, because of physical, mental or emotional problems, are unable to live independently but who need and desire the security of family living. Patients placed in such homes should be reasonably alert and mentally competent; not in need of nursing care; not in need of medication or treatments other than those which a family member could provide; and able to move in and out of the dwelling without the assistance of others. The foster family is expected to provide safe and decent accommodations; a family-like role; and sufficient supervision to assure that the person receives medical attention when needed; proper diet; adequate clothing; and opportunities for social activity. The community agency placing the person in the home is responsible for orienting the family to the person's status and needs; helping the old person and the family meet whatever special problems arise; arranging payment for services; and providing periodic followup of the placement to determine that all is going well.

Boarding homes for the aged are similar to foster homes except that they are larger, serve more people and have less of the intimate family atmosphere. They are often used for former mental hospital patients and others who are not self-sufficient but cannot tolerate the intimacy of family living.

In many states, neither foster nor borading homes are licensed or in any way treated as formal, legitimate parts of the institutional care system.

As a result, the standard of care varies enormously from one home to another. Furthermore, they are sometimes used by welfare departments and others as cheap substitutes for nursing or psychiatric care facilities. These uses are inappropriate, since the homes have neither the staff nor the facilities to provide such care. Consequently many of these homes have gotten bad reputations. It would be unfortunate indeed if the inappropriate use of foster and boarding homes were to blind us to their potential value in meeting the needs of aged persons whose proper environment is somewhat between the formal institution and the home.

Home Care

Home care is probably the most important, and most neglected, area of service to the chronically ill and aged. Its importance lies in the fact that the great majority of long-term patients are cared for at home. A decade ago, the Commission on Chronic Illness estimated that four-fifths of the nation's chronic patients were at home and one-fifth were in institutions. More recent estimates derived from NHS data support this statement.

Who takes care of these long-term patients? In 1958-59, NHS studied a representative sample of those who were receiving personal or nursing care at home. These were truly long-term patients: over 70% had had care on a constant or part-time basis for more than a year. The study indicated that 83% of the patients received their care from members of the household (with the help of a physician); 9% were cared for by other relatives, neighbors or friends; and only 8% received assistance from professional or practical nurses.

These figures indicate the critical role of the family in helping to keep the chronically ill out of institutions. In his study, The Family Life of Old People, Peter Townsend estimates that there would be three or four times as many old people in institutions in Britain were it not for the care given by relatives and friends. He suggests that families help more sick and infirm old people than all other community resources put together.

In this light, home care may be seen as a way to support family efforts through provision of health and related services in the home. Home care is particularly valuable for the aged because it permits the patient to reduce his stay in an institution or perhaps avoid institutionalization altogether.

Today's programs have their historical roots in the 18th Century. In 1796, the Boston Dispensary began to provide various services to the sick poor in their own homes. The idea did not spread until the late 19th Century when nursing services for the homebound sick were organized

from the environment; and protection should be provided against hazards which cannot be eliminated.

Illness may be detected at an early stage by means of periodic exams, or screening and sensitizing people to signs of illness. All of these methods have their limitations. Finding an individual or agency to take responsibility for continuing health surveillance is desirable but difficult.

Most ambulatory care of the old (and the young as well) is given in doctors offices, although doctors do visit the old at home more often than any other age group. Out-patient department care tends toward fragmentation and impersonality. The Neighborhood Health Center represents the attempt to pull the pieces together..

The expanding functions of general hospitals suggest movement toward the concept of community health centers, in which all major services are found in one location. Other institutions are also changing their structure and functions. Important institutions serving the aged include mental hospitals; Extended, Nursing and Personal Care Facilities; and Foster and Boarding Homes.

The most neglected area of service is home care. Four-fifths of the chronically ill are at home, where the family takes the major care-taking role.. Community agencies can assist by providing relief from the constant burden of care; home help; specific health services; and emotional support and encouragement.

Information and Referral Services represent one new response to the problem of evaluating patient needs and finding help in meeting these needs. Other sources of help are available but the probelm is acute due to the disorganization of the health system and the complexity of the needs of the aged.

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in a number of cities. Insurance companies and the Red Cross stimulated the growth of home nursing services in the years between 1909 and 1953. During the same period, private family agencies (and later public agencies) began to develop Homemaker Services, which functioned to maintain household routines and preserve family life during times of stress. Originally focussed on families with young children, Homemakers now serve the aged and chronically ill and disabled as well.

In time, it became evident that the homebound sick needed many kinds of services in addition to nursing and homemaking and that coordination was essential if these services were to be of maximum value. Out of this thinking emerged the concept of a Coordinated Home-Care Program (CHC). This is a program which is centrally administered; uses coordinated planning, evaluation and follow-up procedures; and offers physician-directed medical, nursing, social and related services to selected patients at home. The first modern CHC program was organized at Montefiore Hospital in New York in 1947. By 1965, there were 70 such programs throughout the country, in addition to 30 muliple service programs which lacked the required degree of coordination. At the same time, more than 1,100 visiting nurse associations, health departments and other agencies were providing bedside nursing in the home. Although the number and variety of agencies seems impressive, the number of patients seen was relatively small. Various studies indicated that less than 1% of the population received nursing care at home on a continuing basis.

The effects of Medicare have been (a) to foster the development of home health agencies in smaller cities and rural areas which had not been covered before; and (b) to encourage agencies to add more services and (hopefully) to do a better job of coordination. To be certified for Medicare, an agency must provide nursing and at least one of the following: medical services, social work, physical, occupational or speech therapy, or home health aides. This list is by no means ideal, as it omits a number of important services. However Medicare has stimulated tapid progress toward more comprehensive care. In 1968, there were more than 2,100 certified home health agencies throughout the country. Government officials estimate that fewer than 300 agencies would have been qualified to participate in Medicare as recently as five years ago.

What services are essential to maintain a sick person at home on a long-term basis?

(a) Someone to temporarily relieve the family of the burden of care. This might mean a companion, a night-time sitter, a weekend or vacation sitter, or a place to keep the patient while the regular care-taker is away;

(b) more home help to assist with daily chores, heavy cleaning or moving, personal care of the patient, yard work, upkeep and minor repairs. Home health aides and homemakers are useful but do not do all of these tasks;

(c) technical health services of all kinds. These services should include education of patient and family to increase their knowledge and caretaking abilities;

(d) reassurance and support for patient and family. It is essential that someone be available to provide continuous encouragement as well as special help in times of crisis. Volunteers (e.g., Friendly Visitors) and non-professionals (e.g., Homemakers) often play this supportive role very well, especially if they have the sympathetic backing of the home care agency.

Evaluation of Needs, Counseling and Referral

Old people have a great many health-related needs, and these needs change from time to time. Most urban communities have numerous health resources which might be used to meet these needs----if people were better informed; if agencies imposed less formidable barriers to service; if they worked together more; and if there were someone to steer the individual to the right place at the right time.

Some communities have begun to realize how devastating chaos in the Health System can be for the long-term patient. They recognize the need for new types of personal health managers, planners and steerers. One solution is development of an Information and Referral Service for the Chronically Ill and Aged. The IRS maintains a central file on all community health and welfare resources, and makes information available to all who seek it; provides personal counseling for individuals and families; makes referrals to appropriate agencies and practitioners, and follows up if necessary to see that service is given; and often consultation to health agencies and planners regarding improvement of services to the chronically ill and aged. The functions of the IRS have been well described in a recent paper by Lester and others entitled "Information and Referral Services for the Chronically Ill and Aged." Group helath plans, Well Aging Clinics and Neighborhood Health Centers are also important sources of help to the old person in personal health planning. Home care agencies frequently assume this role for their own clientele.

CONCLUSION

The health needs of the aged represent a fascinating and frustrating challenge: fascinating to the observer, but frustrating to the old person

who is attempting to meet those needs. Few communities offer the aged anything like comprehensive, coordinated and continuous care. In the long run, it will take massive reorganization of the health care and health education systems to bring about such a change. An immediate goal is to sensitize the new health and welfare planning bodies to the needs of the aged, so that they are given appropriate consideration in health planning at the local, state and national levels. This will not happen unless professionals, the aged and citizen interest groups can present an effective case. This cause may well rest upon demonstrating that commitment of social resources to improve the health of the old also results in improved health for the rest of the population. If properly designed, health programs for the aged should have this desirable result.

SUMMARY

Based on their ability to carry out normal roles and responsibilities, most old people function well and should be considered healthy. Only 5% are institutionalized. Fifteen percent of the non-institutionalized aged report inability to work or keep house due to chronic illness and injury, and ability to function can be disrupted by various stresses.

Major causes of death after 65 are heart disease, stroke and cancer. The main causes of disability are heart disease and arthritis and rheumatism, followed by orthopedic and visual impairments and high blood pressure.

There are many reason why old people have difficulty in maintaining health or controlling illness: some of these are internal; some reflect attitudes and practices of health professionals; some spring from the inadequacies of the health care system; and others reflect the general social status of the aged.

Despite barriers, old people utilize a great deal of health service. There is much interest currently in the impact which Medicare will have on utilization, but it is still too early to tell. At present, overall utilization has not increased greatly.

In general, old people need health services which are continuous, coordinated and comprehensive. Specific needs include (a) health promotion and prevention of illness; (b) early detection of illness; (c) health surveillance; (d) ambulatory care; (e) hospital and other institutional care; and (f) evaluation of needs and referral to sources of help.

To promote health and prevent illness, the old should be helped to maintain good habits; potential sources of illness and injury should be removed

Management and the Decision Making Process

The decision making process, although simple and often taken for granted, is essential to the rehabilitation of the handicapped person. The handicapped person who previously had the responsibility of actually doing most of the housekeeping tasks may find himself now unable to do these tasks. He may feel totally dependent and feel as if he has no control over his life. At this point, the rehabilitation specialist can emphasize that while the person may not be able to "do" the housekeeping tasks; he can still provide the vital function of management and decision making which is largely a mental process. This decision making gives the person control over his life and a feeling of worth, independence, and integrity again. The handicapped person can once again actively participate in the household by doing such things as planning the tasks to be done for the day, planning the shopping list, budgeting and providing emotional support for the family. All in all, the rehabilitation specialist should help the handicapped person to shift his emphasis to the mental aspects of homemaking.

Should the person have difficulty making decisions, this skill can be learned. In order to make decisions, one must first have a goal in mind and determine priorities. Then, the person must determine whether or not his actions are moving toward this goal. The person must also consider the conquences of his actions.

The decision making process can be stated very simply as follows:

1. Gathering Information
2. Determining Alternatives
3. Choosing Alternatives
4. Implementing the Alternative
5. Controlling the plan in action
6. Evaluating the Decision

This section hopes to generate an awareness of the undeniable state of becoming older and the eventuality of aging - a social, cultural, and personalized conceptualization. This concept cannot be hidden and more often is a stereotype deriding the elderly. Often the youth and adult alike cannot even clarify their own concepts of the aged and the natural symbolism, death and dying. In working with the whole person, the aging severely visually impaired person, this is often encountered with friends, family, and neighbors, concomitantly with visual loss itself.

Three attitudinal measures have been included to assist in exploring personal feelings of aging and its sequel death and dying. A poem and prayer are the epilogue of what is and how it should be, the irony of aging.

The intent is not to detract from the combined and even more burdening effect of blindness, but presenting a more full picture of an important factor not to be overlooked.

CULTURAL AND SOCIAL IMPACT ON AGING - NEED FOR CHANGE
By Char Heidema

In addition to the physical and social status of the older person, in order to better understand his behavior, we must also look at the cultural system in which he lives.

Culture refers to the shared beliefs and values of a particular society. This society can at the same time consist of a small sub-group or a large group such as the population of the United States. Individuals learn to behave in certain ways through a long process of performing duties, meeting expectations, and receiving rewards and punishments. In this way, behaviors of the individual reflect the values and beliefs of the group.

Sub-groups usually have values and beliefs that are somewhat different from larger or other sub-groups but in some ways are consistent so that intense conflict is avoided. For example, a hippie sub-group may value long hair and a lack of routine, both of which are inconsistent with the popular values of good grooming and a 5-day work week. However, both sets of values are still consistent with the more general values of individualism and freedom of choice. Consequently, they can co-exist without too much conflict.

If an individual or sub-group's behavior strays too far from the culture, he or the group is labeled as deviant and/or incompetent and certain methods are instituted to control the unacceptable behavior.

In relations to the older individual in our society there is considerable confusion about and disregard of cultural values and beliefs. It is falsely assumed that they are the same as for other age groups. For instance, most of a person's life in our society is spent in either preparing for or performing a specialized task. Many of his activities are centered around his financial status and he is expected to take part in the competitive work world in order to achieve and maintain his base of security.

On Labor Day of last year, President Nixon restated his belief in the Protestant work ethic in which competition, social usefulness, and productivity are the standards for personal worth and respect. He attributed our nation's continued well-being to maintaining this value position.

To support this basic value position our advertising and financial resources are geared toward youth, action, beauty, strength, victory, etc., etc.

These values do not allow for the change in abilities and interests of the older individual. The older person is no longer able to compete, is not interested in keeping up with the next guy, and usually considers that he has contributed enough to the economic machine. He feels entitled to a time to relax, reflect, and enjoy rather than push, rush, and produce. Unfortunately, many feel guilty or do not have the financial resources to abandon this life style.

CULTURAL AND SOCIAL IMPACT ON AGING - NEED FOR CHANGE (Continued)

The society has not addressed itself to this age group and as a result, the older person does not have new cultural expectations to which he can respond. All too often, his behavior is seen as deviant and/or incompetent in relation to younger and middle age values, and he is controlled rather than allowed to establish new values and beliefs consistent with his new status.

The lack of expectation and shared values or negative expectations such as "Dirty Old Man" and "Bitchy Old Woman" leads to a negative self image, a feeling of having no acceptable role or social status, and a state of "What do I do now?" The question of "what do I do now?" is usually answered by responding to the immediate environment. The sub-group of the immediate environment may encourage a positive self-image with continued goal-setting, pursuing personal interests, establishing new expectations and rewards, or it may encourage a negative self-image with incompetence, helplessness, hopelessness, passivity and futility as the expected and reflected behaviors.

The impact of the here-and-now culture can be observed in a variety of settings. The reflected behaviors range from active, happy, content, enthusiastic older people to withdrawn, passive, miserable people. The type of influencing culture is determined by the values and beliefs of those responsible for setting up the expectations, roles and rewards.

Behavioral patterns of an individual reflect physical, social, personal, and cultural aspects that have influenced him. Therefore, intervention in any of these areas will influence the behavior. The shared belief and value that "Old is Beautiful" will have a different effect than accepting and using a hearing aid but both are important in influencing the individual's self-concept and his behavior and both require our attention.

SOCIAL LOSSES OF THE GERIATRIC PATIENT
By Becky Moppins

I. The social losses of the Geriatric patient and their relationship to behavior.

A. Loss of family ties

1. No longer the wide spread cultural ties which tended to bind the aged person to his family.

B. Loss of friends

1. Many of the aged have outlived their friends and social contacts.

2. Due to transportation or physical limitations, they find it hard to maintain relationships.

C. Loss of job

1. Many of the aged raised families, held responsible jobs, had reasonable income.

2. Some are still capable of working, but due to retirement laws are no longer able to be productive members of the work force.

D. Loss of finances

1. Many aged are forced to live under substandard conditions due to minimal savings and earnings.

2. For someone who has made a fair living, it is humiliating to now receive welfare.

E. Loss of home

1. Due to either physical or financial limitations, many of the aged can no longer maintain the only bit of environment they are familiar with.

II. Behaviors shown

A. Fear

1. Acting out, threat of being combative, verbal assaults, withdrawal, isolation.

2. Now wanting closeness, keeping everyone away for fear of losing again. Same for not wanting to do "activities" or "projects" because life-long objects have either been taken away or had to be discarded.

SOCIAL LOSSES OF THE GERIATRIC PATIENT (Continued)

B. Anger

1. By predicament - at family for desertion.

2. At staff because they are now in authority position that they once held.

3. Not having independency felt deserved.

4. May act out anger through behavior:

   a. Incontinency
   b. Defiance
   c. Uncooperativeness
   d. Abusive - physical and verbal

C. Lonliness

1. Withdrawn

2. Won't participate in activities.

3. Don't care attitude.

D. Overdependency.

1. Wanting staff to meet every need.

2. Unwillingness to do for self.

3. Whining, childlike behavior.

4. Vying for attention.

5. Temper tantrums.

6. Demanding great deal of your time, demanding needs to be met.

E. Communal living after independent living.

1. Having to be subject to:

   a. Roommates
   b. Schedules
      (1) Getting up, going to bed, eating snacks, having coffee or tea when desired.
      (2) Bathing.
      (3) Money.
      (4) Exposure of body.
      (5) Personal belongings.
   c. Loss of respect.

PSYCHOLOGICAL EFFECTS

1. I was first confronted with death at the age of _____ when _____ died.

2. My reaction was _____

_____

3. When I think of death now, I think of _____

_____

4. To me death means:

_____The end; the final process of life.
_____The beginning of a life after death; a transition; a new beginning.
_____A joining of the spirit with a universal cosmic consciousness.
_____A kind of endless sleep; rest and peace.
_____Termination of this life but with survival of the spirit.
_____Don't know
_____Other_____

5. When I was a child, death was talked about in our family:

_____Openly
_____With some sense of discomfort.
_____Only when necessary, then with an attempt to exclude the children
_____As though it were a taboo subject
_____Never recall any discussion
_____Other _____

6. My conception of death as a child was:

_____Heaven and hell concept
_____After-life
_____Death as sleep
_____Cessation of all physical and mental activity
_____Mysterious and unknowable
_____Other than the above_____
_____No conception
_____Can't remember

7. The following have most influenced my present attitudes toward death:

_____Death of someone close
_____Specific reading
_____Religious upbringing
_____Introspection and meditation
_____Rituals e.g., funerals
_____Longevity of my family
_____My health or physical condition

_____Other_____
_____Pollution of the environment
_____Domestic violence
_____Wars and/or possibility of nuclear war
_____Poverty
_____Changes in health conditions and morality statistics

8. Religion has played the following role in the development of my attitudes toward death:
_____A very significant role
_____A rather significant role
_____Somewhat influential, but not a major role
_____A relatively minor role
_____No role at all

9. My belief about the causes of most deaths is that
_____Most deaths result directly from conscious efforts by persons who die
_____Most deaths have strong components of conscious or unconscious participation by the persons who die
_____Most deaths just happen; they are caused by events over which individuals have no control
_____Other_____

10. The extent to which I believe that psychological factors can influence (or even cause) death is that:
_____I firmly believe that they can
_____I tend to believe that they can
_____I am undecided or don't know
_____I doubt that they can
Other_____

11. The possibility of massive human destruction by nuclear war has influenced my present attitudes toward death or life:
_____Enormously
_____To a fairly large extent
_____Moderately
_____Somewhat
_____Very little
_____Not at all

12. The aspect(s) of my own death that is most distasteful to me is that:
_____I could no longer have any experiences
_____I am afraid of what might happen to my body after death
_____I am uncertain as to what might happen to me if there is life after death
_____I could no longer provide for my dependents
_____It would cause grief to my relatives and friends
_____All my plans and projects would come to an end
_____The process of dying might be painful
Other_____

13. I think about my own death:
_____Very frequently (at least once a day)
_____Frequently
_____Occasionally
_____Rarely (no more than once a year)
_____Very rarely or never

14. When I think of my own death (or when circumstances make me realize my own morality, I feel:
_____Fearful
_____Purposeless
_____Discouraged
_____Depressed
_____Pleasure, in being alive
_____Other _____

15. If I could choose, I would die:
_____In youth
_____In the middle prime of life
_____Just after the prime of life
_____In old age
Other_____

16. I believe, in fact, that I will die
_____In youth
_____In the middle prime of life
_____Just after the prime of life
_____In old age
Other_____

17. If I had a choice, I would prefer a:
_____Tragic, violent death
_____Sudden, but not violent death
_____Quiet dignified death
_____Death in the line of dute
_____Death after a great achievement
_____Suicide
_____Homicidal victim
_____There is no "appropriate" kind of death
Other_____

18. To me, death with dignity means_____
_____

19. I would be willing to sacrifice my life:
_____For a loved one
_____For an idea or a moral principle
_____In combat or a grave emergency where a life could be saved
_____Not for any reason
Other_____

20. The primary reason for the answer which I gave to the above question is:

_____To spare my spouse loneliness
_____To avoid loneliness myself
_____To spare my spouse grief
_____To avoid grief for myself
_____Because the surviving spouse could cope better with grief or loneliness
_____Other_____

21. There has been a time of my life when I wanted to die, mainly:

_____Because of great physical pain
_____Because of great emotional pain
_____To escape an intolerable social or interpersonal situation
_____Because of great embarrassment
_____For reasons other than above
_____Never-does not apply

22. I would like to have my body disposed of in the following way after my death:

_____Burial
_____Cremation
_____Donation to medical school or science
_____I am indifferent
_____Other_____

23. If I learned today that I have a fatal illness, I would probably

_____

24. If I had a fatal illness, I would want to be told of it. Yes___ No___

25. I (would/would not) want my family to know I have a fatal illness because

_____

_____

26. If I needed help in facing death, the person I would trust most would be_____

27. As death approached, I would want to be certain that _____

_____

28. I have the most trouble talking to a dying person when I know_____

_____

29. I wish there was some way families facing death could be helped to_____

_____

1. Most old people are in poor health.

2. Old people are bound to go downhill as they lose jobs, spouses, old friends.

3. People over sixty-five are not as bright or productive as younger people.

4. All grandparents want to live with their grown children.

5. Older persons should not live alone.

6. The elderly need young people around to boost their morale.

7. The elderly require less food than younger people.

8. Aging parents can be expected to help their children.

9. Sexual activities and interest decline sharply with age.

10. Most marriages in later years are a mistake.

11. Life is less satisfying after retirement.

12. Older people should be discouraged from dwelling on the past.

13. An older person who is sick should be moved to a hospital or nursing home.

14. It is best not to discuss a pending operation with an older person.

15. It is cruel to talk about death with an elderly person.

PERSONAL FEELINGS ABOUT OLD AGE

1. Name two things that worry you about growing old.

2. Name two things that you feel would be "neat" about growing old.

3. Name two things that you dislike about old people.

4. Name two things that you like about old people.

5. List in order the three most common places you would find old people in your community.

6. To what age would you like to live?

7. "I consider people over the age of _____ to be old people."

OLD MEN

In savage tribes where skulls are thick
And primal passions rage,
They have a system, sure and quick,
To cure the blight of age.
For when a native's youth has fled,
And years have sapped his vim,
They simply knock him on the head,
And put an end to him.

But we, in this enlighted age,
Are built of nobler stuff.
And so we look with righteous rage
On deeds so harsh and rough.
For when a man grows old and gray,
And weak and short of breath,
We simply take his job away
And let him starve to death.

—George E. Phair

A PRAYER

Lord, Thou knowest better than I know myself that I am growing older, and will someday be old.

Keep me from getting talkative, and particularly from the fatal habit of thinking that I must say something on every subject on every occasion.

Release me from craving to try to straighten out everybody's affairs. Keep my mind free from the recital of endless details — give me wings to get to the point.

I ask for grace enough to listen to the tales of others' pains. Help me to endure them with patience.

But seal my lips on my own aches and pains — they are increasing, and my love of rehearsing them is becoming sweeter as the years go by.

Teach me the glorious lesson that occasionally it is possible that I may be mistaken.

Keep me reasonably sweet; I do not want to be a saint — some of them are so hard to live with — but a sour old person is one of the crowning works of the devil.

Make me thoughtful, but not moody; helpful, but not bossy. With my vast store of wisdom, it seems a pity not to use it all — but Thou knowest, Lord, that I want a few friends at the end.

— Anonymous

TEN BASIC CONCEPTS OF AGING

It is necessary to recognize that many persons have false stereotypes about the older people in American society which are usually detrimental to this segment of our population. In an effort to correct these stereotypes, the National Council on Aging has formulated ten basic concepts of aging. These are:

1. Aging is universal.

2. Aging is normal.

3. Aging is variable. The way in which each person ages is unique. The process is influenced by the individual's life pattern of work or activity, rest, human associations, diet, exercise and mental attitude.

4. Dying is inevitable, something which is hard to accept for most people.

5. Aging and illness are not necessarily coincidental. It is possible to enhance one's chances for a healthy old age through improved living habits.

6. Older people represent three generations; it is necessary to identify the variable characterists among these generations.

7. Older people can and do learn. Learning patters may change, the speed of learning may diminish, but the basic capacity still exists.

8. Older people can and do change. The radical changes in their pattern of life make readjustment essential. The common idea of inflexible old age is in most cases inaccurate.

9. Older people want to remain self-directing. The idea that they need to be told what to do is highly inaccurate.

10. Old people are vital human beings. They have certain incapacities, but they can develop existing capacities to lead a productive, rewarding life.

PSYCHOLOGICAL ASPECTS

As they get older, most people begin to notice impairments in their sight and hearing. Their other senses also become less efficient. Due to declines in the efficiency of the central processes, perception, reaction time, speed and accuracy of responses, and complex task performance all suffer as aging progresses. Likewise, loss of brain tissue, changes in the metabolic rate of the brain, and loss of circulatory capacity in the brain all produce changes in mental functioning. Intelligence, learning, memory, thinking, problem-solving, and creativity all show reductions with advancing age.

Yet these losses seldom hamper the activities of older people until quite late in life, and most older people maintain their psychological skills at levels quite acceptable for adequate everyday functioning. In addition, the extent to which chronologically old people exhibit declines in function varies considerably. Some people at age sixty-five show very few signs of loss of function. As long as they stay out of very volatile situations, older people are usually capable of solving most problems that arise. And while the energy needed to work declines, the ability to do creative work in later life seems to remain for most people who were capable of it when they were young. The most serious deficit which apparently cannot be corrected is in the ability to coordinate bodily movements, but in industrial societies little premium is put on exceptional skill in this area. Overall, then, the picture is relatively positive for older people in terms of psychological functioning. The most important factor in maintaining mental skills into old age seems to be an environment which allows the mental faculties to be constantly exercised.

Palo Alto Times, Thursday, Oct. 11, 1973

WRONG IMPRESSIONS ABOUT GETTING OLD

By Jack V. Fox

Stereotypes about the human aging process, particularly the adage that old people must keep busy, to keep happy, are challenged by a 31-year-old sociologist-researcher at the University of Southern California's Andrus Gerontology Center.

Dr. Vern L. Bengston says that recent studies have shown many widely held theories about the aged are myths based to a large extent on the stubborn clinging to the Protestant work ethic.

Bengston challenged such assumptions as:

-Retirement is a traumatic experience and many die soon thereafter.

-Sexual interest ceases in later years.

-IQ declines, people lose the ability to learn as they grow older. Extensive testing of older subjects denies this.

-Old age means institutionalization sooner or later. Wrong. Only about 5 per cent of those over 65 are in nursing homes or extended care facilities.

Bengston takes most emphatic disagreement with the idea that the only way to be happy in retirement is to stay busy.

"This is the most pervasive stereotype of all," he says. "It is part of the American value system--the concept that in order to be anyone you have to produce, to be occupied."

"Actually there is nothing wrong with sitting in a rocking chair if that is your life style. It makes a lot more sense than taking up some meaningless, time-filling occupation.

"If you find you like painting, then paint. If you like rug weaving, then weave. But if you prefer to sit back with a book, do so. And if you just want to loaf, why not?"

Bengston also challenges the idea that the change in rhythm when men, particularly, cease regular work and retire frequently brings death within a short time.

"The fact is that hard work is debilitating and studies show that for many people health improves on retirement. Most men enjoy work much less than they will admit."

One of the cruelest myths is that sexual interest and performance decline sharply in older age.

"Actually, it remains pretty steady within the life span right up to death," he says. "But younger people don't allow it, they deny it, they pretend it doesn't exist."

Bengston, who has recently published a book, "The Social Psychology of Aging," says the negative stereotypes are particularly unfortunate "considering we have more than 20 million persons in this country over 65."

Leisure Time Suggestions for the Older Visually Impaired
by Dr. Grace Napier

1. Gardening or tending house plants.
2. Using the talking book machine.
3. Collecting different shapes and sizes of buttons and then sewing them on black cloth.
4. Making loop pot holders.
5. Collecting various things such as different types of salt shakers or small figurines.
6. Leather crafts.
7. Cover a bottle with clay and then stick objects with interesting shapes in the clay.
8. Make a doorstop using a large catalogue. Each page is folded in half toward the center and then sprayed with paint.
9. Conversation with a friend.
10. Telephone pals--have a list of people to call frequently just for a chat.
11. Go for a walk with another person.
12. Listen to music.
13. Make stuffed toys. Someone else does the sewing while the blind person stuffs the toy.
14. Make plaster of paris imprints.
15. Crochet or knit.

Other sources of recreation activities for the blind:

Recreation for the Blind by C. J. Ritter

Handbook for the Blind by Julia Bindt

Other Recommended Recreation Activities taken from Recreation for Blind Adults by Maurice Case.

ARTS & CRAFTS

1. Basketry
2. Raffia
3. Weaving
4. Rugmaking
5. Ceramics
6. Sculpture
7. Leather projects
8. Metal craft
9. Millinery and Sewing
10. Woodwork
11. Tiling (Mosaics)

SOCIAL RECREATION

1. Dancing (social dances)
2. Eurythmics (Lessons in social dancing, folk dancing and square dancing)
3. Dramatics (plays)
4. Group activities
5. Literary and Language Activities (braille, debates, forums, languages, lectures, library, newspaper, public speaking, reading, spelling, typing, writing, phone-dialing, cane travel)
6. Music (autoharp, bands, chorus, community sings, folk songs, guitar, harmonica, music appreciation)
7. Nature and Outings
8. Sports and Games (bingo, bowling, gymnastics, pool, roller skating, table games, shuffleboard, swimming)

MISCELLANEOUS ACTIVITIES

1. Beauty Culture
2. First Aid and Home Nursing
3. Mobility (indoors)
4. Ham Radio
5. Religious Activities
6. Tape Recording Clubs

Leisure Time Suggestions and Findings by Dr. Max Shirley

The National Council on Aging recently obtained information from older people concerning their preferences in relation to leisure time activities. The survey indicated the following as activities they preferred:

1. Socializing with friends or volunteers who come to see them.
2. Gardening or working with potted house plants.
3. Reading, watching T.V., listening to the radio.
4. Participating in recreation activities and hobbies, games and contests.
5. Going for walks.
6. Music for listening or dancing.
7. Religious services.
8. Travel films.
9. Trips (to the race track, stock shows, zoo, cultural events, camping, rafting, jeeping).
10. Sports (biking, skiing, etc.).

Other Suggestions for Leisure Activities:

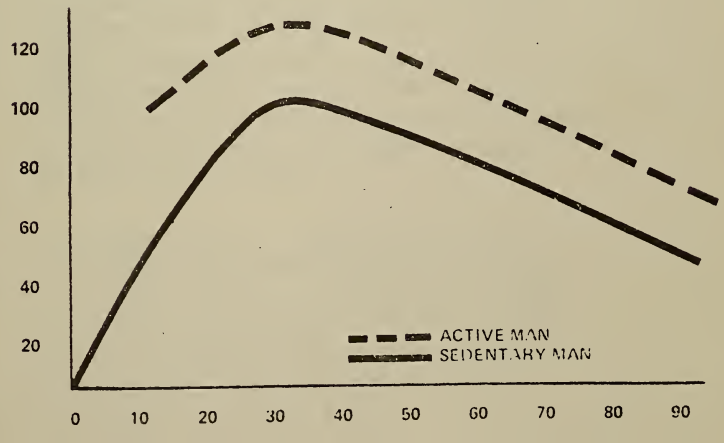
1. Men often enjoy using previous skills such as carpentry. They can do volunteer work around the community building things such as benches or playground equipment.
2. The Foster Grandparent program is excellent in that it involves the elderly person with a handicapped child in the community.
3. Involvement in the many Senior Citizen programs is good from the standpoint of socialization.

WHY EXERCISE

Exercise is not the foutain of youth in which you can dip into and never grow old. The aging process is hereditary (received from your parents). Aging is a partly unsolved mystery with many unknowns. One part of the mystery we do understand is that the heart plays an important role in maintaining the work capacity (physical fitness) of the human body. The heart acts as a central pumping station from which all the nutrients (food, oxygen, hormones etc.) of the body are sent out to the various receiving stations. If the heart (central pumping station) is weak the receiving stations such as the arm and leg muscles, the brain, the kidneys, the bones and all the other organs of the body will not receive enough nutrients and some of the cells in these organs die (which is synonymous with aging). When enough cells die our life is completed. The heart just like any other muscle must be exercised to remain strong. When we immobilize the heart as we do in our sedentary way of life we, in effect, put our heart in a cast similar to what we do for a broken arm. The heart muscle becomes weakened through disuse and atrophies just as the arm muscles do when not used. A weakened heart functions less effectively and therefore delivers nutrients less effectively. With age the cardiac output (the amount of blood pumped by the heart) is shown to decrease by 30% from age 30-70. The lung function is also shown to decrease by about 30-40% from age 30 to 70. Muscle and bone are also

shown to decrease by 20-30%. In other research studies exercise programs have been able to improve the work capacity (physical fitness) of a person by 20 to 30%.

Physical fitness is one component of your life which enables us to live to it's fullest. Our physical fitness is also related to our emotions and the attitudes we hold toward physical activity are important. These attitudes are developed through previous experiences but are influenced by an understanding of how physical activity affects the human body. Physical fitness is important at any age, it is not confined to the young or the athletic but is relevant to everyone throughout life. Physical fitness can not prevent the aging process but it can enable one to function more fully at each chronological age of his life.



The graph in figure I shows how our work capacity (physical fitness) decreases with age. Work capacity refers to the amount of work we can do continuously. The information presented on the graph was taken by walking people of different ages on a motor driven treadmill at three miles per hour. The treadmill grade can be changed so that it is similar to walking up a steeper and steeper hill. The treadmill hill walking is called a work capacity test and gives an indication of the strength and function of the heart, lung, blood vessels and muscles of the arms and legs. The dotted lines above the dark black line is the level to which one can develop his work capacity. The diagram in figure I clearly shows that even with exercise we still age at the same rate as if we did not exercise but that the work capacity of each individual was higher for each chronological age. A man in good physical condition may function at the same work capacity as a man 30 years his junior who is not physically fit. About age thirty is the peak of man's physical work capacity. After this age the average man begins to decrease in work capacity. The function then of a well rounded exercise program is to aid in maintaining the maximal work capacity for each chronological age.

The evidence favoring a physically active life is irrefutable - man is motion and without activity the human body degenerates. The decision to be active or sedentary is yours to make. It is never too late. We can not promise you a longer life but we can promise to put life into your years, but in the final analysis the decision is yours!

SAMPLE

Exercise Program for the Elderly

me of Exercise	Body Area	Duration	Energy Cost in Mets	Type of Exercise	Booklet no. and page
e Heel Rise	Foot, ankle & lower leg	15 sec.	1.5	slow heart rate	B-2, P-1
ee Lift to Chest	Knee, thigh, hip	15 sec.	3.0	fast heart rate	B-2, P-1
tting Arm Swing erhead	Upper arm,shoulder and back	15 sec.	1.8	slow heart rate	
tting Hip tation	Thigh, and hip abdominal	15 sec.	2.2	slow heart rate	B-3, P-2
tting Leg Walk	Thigh, hip and abdominal	15 sec.	2.5	fast heart rate	B-7, P-1
e Touch	Back & shoulder	15 sec.	2.2	slow heart rate	B-2, P-6
tting Double c lide	Thigh, hip and abdominal	15 sec.	2.0	slow heart rate	B-2, P-5
anding Side- rd Leg Swing	Lower leg, thigh & hip	15 sec.	2.7	fast heart rate	B-4, P-1
anding Heel- ft	Ankle, lower leg, thigh and back	15 sec.	2.5	fast heart rate	B-4, P-2
anding Walking Place	Ankle, lower leg, thigh, back and hip	15 sec.	3.0	fast heart rate	B-6, P-3
t-Ups	Thigh, Back, and abdominal	15 sec.	2.2	slow heart rate	B-5, P-4
deward Arm ing with Re- stence	Hand, forearm, upper arm, shoulder, and back	15 sec.	2.2	slow heart rate	B-5, P-1
ck Extension	Back of thigh, hip and back	15 sec.	2.2	slow heart rate	B-9, P-1
anding Half ee Binds	Lower Leg, knees, thigh and hips	15 sec.	2.4	fast heart rate	B-4, P-3
anding Walking ce	Ankle, lower leg, thigh, back and hip	30 sec.	3.0	fast heart rate	B-6, P-3
rward and Back- rd Leg Swing	Thigh, hip abdominal and back	15 sec.	2.8	fast heart rate	B-4, P-4

ıme of Exercise	Body Area	Duration	Energy Cost in Mets	Type of Exercise	Booklet no. & page
tanding Walking n Place	Ankle, lower leg, thigh, back & hip	15 sec.	3.0	fast heart rate	B-6, P-3
itting Leg Walk	Ankle, thigh, hip, abdominal	15 sec.	2.5	fast heart rate	B-7, P-1
oe Heel Rise	Foot, ankle, and lower leg	15 sec.	1.5	slow heart rate	B-2, P-1
ownward Arm wingwith esistence	Hand, forearm, upper arm, shoulder and back	15 sec.	2.2	slow heart rate	B-5, P-2
tanding Walking n Place	Ankle, Lower Leg, thigh, back and hip	30 sec.	3.0	fast heart rate	B-4, P-2
orward and ackward Leg wing	Thigh, hip, abdominal and back	15 sec.	2.8	fast heart rate	B-4, P-4
tanding Walking n Place	Ankle, lower leg, thigh, back & hip	15 sec.	3.0	fast heart rate	B-4, P-2
i g Leg Walk	Ankle, thigh, hip, abdominal	15 sec.	2.5	fast heart rate	
oe Heel Rise	Foot, ankle and lower leg	15 sec.	1.5	slow heart rate	B-2, P-1
rm Curls - with Resistance	Hand, forearm, upperarm, shoulder and back	15 sec.	2.2	slow heart rate	B-6, P-1
Standing Double Leg Extension	Thigh, hip & back	15 sec.	2.0	slow heart rate	B-10, P-7
Standing Walking in Place	Ankle, lower leg, thigh, back & hip	30 sec.	3.0	fast heart rate	B-6, P-3
Sitting Toe Heel Rise	Foot, ankle, & lower leg	30 sec.	1.5	slow heart rate	B-1, P-1

SAMPLE

Exercise Program for the Elderly

ame of Exercise	Body Area	Duration	Energy Cost in Mets	Type of Exercise	Booklet No. and Page
oe Heel Rise	Foot, ankle and lower leg	15 sec.	1.5	slow heart rate	B-1, P-1
oot Pivot	Foot, ankle and lower leg	15 sec.	1.5	slow heart rate	B-1, P-2
est 15 sec.					
oot Slide one foot at a ime to start ith)	Knee, thigh and hip	15 sec.	1.8	slow heart rate	B-2, P-5
Rest 15 sec.					
Sitting Leg Walk	Thigh, hip and abdominal	15 sec.	2.5	fast heart rate	B-7, P-1
Rest 15 sec.					
Sitting Single Knee Lift to Chest	Thigh, hip, abdominal, forearm, upper arm & shoulder	15 sec.	3.0	fast heart rate	B-2, P-1
Toe Heel Rise	Foot, ankle and lower leg	15 sec.	1.5	slow heart rate	B-1, P-1
Rest 15 sec.					
Toe Touch (Exercise slowly)	Back and shoulder	15 sec.	2.2	slow heart rate	B-2, P-6
Shoulder Shrug	Upper back	15 sec.	1.8	slow heart rate	B-3, P-1
Shoulder Rotation	Back & abdominal	15 sec.	1.5	slow heart rate	-
Sideward Bend	Back, arm & abdominal	15 sec.	1.8	slower heart rate	-
R 5 sec.					
Sitting Leg Walk	Thigh, hip and abdominal	30 sec.	2.5	fast heart rate	B-7, P-1

SAMPLE (Cont.)

Exercise Program for the Elderly

ame of Exercise	Body Area	Duration	Energy Cost in Mets.	Type of Exercise	Booklet No. & Page
itting Sideward eg Spread	Thigh, hip and abdominal	15 sec.	2.2	fast heart rate	B-8, P-3
itting Overhead rm Lift	Arms and shoulders	15 sec.	2.0	fast heart rate	B-2, P-6
oe Heel Rise	Foot, ankle & lower leg	15 sec.	1.5	slow heart rate	B-1, P-1
est 15 sec.					
ackward Arm hrust	Shoulders & back	15 sec.	2.0	fast heart rate	B-3, P-3
eck Rotation	Neck	15 sec.	1.5	slow heart rate	--
est 15 sec.					
itting Legwalk	Thigh, hip and abdominal	15 sec.	2.5	fast heart rate	B-7, P-1
oe Heel Rise	Foot, ankle and lower leg	15 sec.	1.5	slow heart rate	B-1, P-1

HEALTH FESTIVAL

EXERCISE!!! EXERCISE!!! EXERCISE!!! EXERCISE!!!

Why Exercise????

1. You'll feel better!
2. You'll look great!
3. You'll live longer!

When Should We Exercise????

1. Upon arising in a.m. to get the day off to a good start.
   or
2. Before retiring in the evening to release tension and promote relaxation!
3. Work it in at intervals during the day!
   (How about during commercials!!!)

How Much Exercise????

1. Start up gradually!
2. Stop just short of fatigue!!!
3. Progress in easy stages!!!

What Kind of Exercise????

1. Something you enjoy doing!
2. Something that involves movement of as many parts of your body as possible!!!!
3. Something your physician feels is appropriate for you!

WALKING - THE PERFECT EXERCISE FOR CONDITIONING

Why Walking?????

1. It's easy, natural
2. It has virtually no drawbacks, healthwise - it's Safe!!!!
3. It's familiar, we know how to do it!
4. It's a moderate exercise
5. It puts all the big muscles of the body into play:
   a. leg muscles
   b. hip muscles
   c. stomach muscles
   d. shoulder muscles
   e. chest muscles
6. It conditions the body systems:
   a. circulatory system
   b. respiratory system
   c. skeletal system
   d. muscular system
   e. nervous system

What else does walking do?????

1. Relieves tension, anger, frustration!
2. Relieves fatigue!
3. Promotes sleep!
4. Increases a sense of well-being!
5. Helps control weight

MORE SUGGESTIONS FOR KEEPING FIT!!!!!!!

1. AVOID sitting for extended periods of time.
2. Keep your fingers busy many times a day - work with "Silly Putty", write a letter, practice typing!!!!
3. Practice good posture habits!!!!! STRAIGHTEN UP!!!!
4. Pick up your feet when walking!! DON"T SHUFFLE!!!!
5. Frequently through the day take a few deep breaths with accent on the exhaling!!!! (try this by an open window)
6. Practice GOOD BODY MECHANICS!!!!!!
   a. Don't bend from the waist-bend at the knees and keep your back straight. SAVE YOUR BACK!!!!
   b. Push or pull an object instead of lifting.
   c. Get close to the load before lifting, don't reach for it!!!
7. And don't forget one of the BEST exercises!!!! SMILE!!!!!!!!

PREVENT ACCIDENTS!!!!!

1. To sit down bend forward and sit down slowly. Make sure you are close to the chair.
2. BEWARE of scatter rugs!!!
3. Watch out for split level floors with badly lit steps.
4. Every stairway should have a railing!!!
5. If you require a walking aid (cane, walker, etc.) by all means USE it at all times. Do not depend on holding to the wall or furniture for support.
6. Throw away those old bedroom slippers and wear something with good support! Inexpensive keds that fit are very SAFE!!!
7. Don't change positions QUICKLY!! PAUSE when going from a lying position to sitting, and when going from sitting to standing. DON'T BE IN A HURRY!!!!
8. WATCH OUT for spills on the kitchen floor!!!!
9. If it is difficult to sit down in the bathtub try the following:
   a. Place stool or kitchen chair in tub, saw off legs to tub edge height. You can sit on the chair and soap yourself. Use shower to rinse or rubber shower extension.
   b. Bathtub grab bars are available. Purchase only those that attach securely.
   c. Raised toilet seats are commercially available.
   d. Toilet arm rests for getting on and off the toilet are available.

SUMMARY

Additional equipment for home exercises are available. They include stationary bicycle, wall pulleys, rowing machine, dumb bells, etc. Exercise programs for specific problems are available through Physical Therapy upon your Physician's request.

All activities possible should be indulged in. Work, walk, shop, house chores, gardening, visiting, senior club and church organizations, theatre, travel, swimming and sports, gymnasium, health club and "Y" activities.

EXERCISE is sort of a MIRACLE DRUG!!! (It MUST be a miracle drug: we can get it without prescription, and it doesn't cost a penny!)

SOME SAFE, SIMPLE EXERCISES TO MAINTAIN RANGE OF MOTION AT JOINTS

Sitting or Standing:

Head and Neck

1. Bend head forward toward chest.
2. Bend head backward, look up at ceiling.
3. Turn head to look over right shoulder.
4. Turn head to look over left shoulder.

Shoulders

1. Raise your arms as high as you can over your head, keeping elbows straight. Then swing your arms out and down to your sides.
2. Shrug your shoulders.
3. Place fingertips behind neck. Push elbows back as far as possible Return.

Elbows and Hands

1. Bend elbows. Straighten.
2. Roll palms and forearms upward. Roll downward.
3. Make a fist with each hand. Open fingers.

Sitting:

Knees and Ankles

1. Bend knees as far as possible. Straighten knees as far as possible. Hold a few seconds. Relax.
2. Bend ankle upwards and downwards. Move foot around in a circle.
3. Curl toes under. Straighten.
4. Raise your leg up from the hip, alternately as if stamping your feet.

Backlying

1. With knees bent and feet flat on floor, reach toward knees slowly raising head and shoulders.
2. With knees bent and feet flat on floor, tighten stomach muscles and press low back flat to floor. Hold a few seconds. (Do not hold your breath during this exercise.)

PHYSICAL ACTIVITIES PROGRAMS FOR THE ELDERLY

Preparation for Physical Activity Program

A. Staff selection

Knowledgeable
Enthusiasm

B. Physician's Referral Form

Facility _____ Date _____

Name _____ Room No. _____

Date of Admission _____ _____ Age _____

Diagnosis _____

Secondary Diagnosis _____

I grant permission for the above patient to participate in a physical activity program designed for the aged, to the fullest extent of his/her abilities.

Limitations _____

Precautions _____

Suggestions/Special Orders _____

_____
Physician's Signature

C. Approval of the Nurse on duty.

D. Resident Selection

E. Place for Physical Activity Program

F. Equipment for Physical Activity Program

Physical Activity Program

A. Purpose

1. Fun
2. Develop and maintain strength
3. Develop and maintain endurance
4. Develop and maintain range of motion
5. Socialization

a. Develop and maintain self-image
b. Success

II. B. How often and how long should physical activity program be scheduled?

1. Three days per week

2. One hour per day

   a. This hour includes the time required to bring the residents from their rooms to the activity area and return them to their rooms. The physical activity program in actual length should be about 30 minutes (To start with, this length of time will be too long for the average resident to participate in. A half hour of continual activity is the goal which you wish to reach for the residents of your nursing home.)

3. Slow heart rate exercises. The slow heart rate exercises are primarily design d to help to maintain muscle tone and range of motion. They do not stimulate the cardiovascular system to any great extent.

4. Fast Heart Rate Exercises. These exercises are designed to increase the resident's endurance thereby stimulating, maintaining and developing the pulmonary system and the cardiovascular system.

5. Level of Difficulty. The physical activities included in the exercise book range in level of difficulty from 1.5 mets (multiples of that energy required just to lie in bed) to 3.5 mets which is equivalent to a brisk walk.

6. Progression of Physical Activity. Physical activity with the aged must begin very slowly; therefore, take an activity and do it for 10 to 15 seconds, relax for 15 seconds and then do another exercise for 15 seconds. Each resident and each nursing home has its own level at which it must operate. In order to meet the needs of the residents of your nursing home, you will need first to observe at what level they function physically and then design your physical activity program around it. The following is an example of a physical activity program used in a nursing home in Wisconsin.

Principles of Work Simplification

Work simplification, or motion economy, is extremely important for the handicapped individual. Frequently, he must take more time and expend more energy doing homemaking activities according to A Manual for Training the Disabled Homemaker. Therefore, many aspects of saving energy in housework become critical. These aspects are the following:

1. Mental and emotional attitudes
2. Proper application of body mechanics
3. Pace of work
4. Organization of work
5. Methods of work in specific tasks
6. The workplace

Mental and Emotional Attitudes:

Many people approach homemaking with feelings of boredom, discontent, or fear. Emotional reactions can result in a physical effect on the body by increasing tension. This increased tension can increase the heart rate and blood pressure causing fatigue. The rehabilitation specialist can help the handicapped person to overcome these emotional reactions to homemaking by helping him to realize that homemaking can be rewarding and by helping him to become competent in appropriate homemaking skills.

Using the Body:

Any time muscles are used, energy is consumed. Therefore, it follows logically that the fewer muscles used, the fewer demands on the body. The table at the end of this section "Energy Cost in Body Activities" details the energy expended while performing specific activities.

There are many aspects to using good body mechnaics. A good sitting and standing posture with all the parts of the body aligned encourages balanced use of the muscles, therefore, requiring the least

effort. An occasional change from sitting to standing, if possible, puts a different set of muscles to work and aids circulation. Also, if the person finds he is feeling tension, he should lie down and relax for a few minutes before continuing the task.

Pace:

The pace at which the homemaker works is closely associated with his emotional and mental attitudes and his ability to organize and control his work. A moderate pace is usually the least energy consuming. In walking, for example, a rapid pace takes 1½ times as much energy while walking really slowly is almost as costly due to loss of momentum.

Organization of work:

A written plan of the work to be done in the most practical approach when emphasizing organization. A list of the jobs to be done each day can substitute for a plan. Rest periods should also be planned in the daily schedule. In many disabilities, rest may be part of the therapeutic management of the condition and, therefore, should take precedence over other activities in the schedule.

Methods of Work:

These principles of motion economy can help to develop better methods of doing the daily housework.

1. Use both hands to work in opposite and symetric motions whenever possible.
2. Lay out work areas within normal reach. Arrange supplies in a semi-circle.
3. Slide — do not lift and carry. Use a table with wheels when moving from one surface to another.
4. Use fixed work stations. Have a special place to do each job so that supplies and equipment can always be kept there for immediate use.

5. Use the smallest number of work elements. Select equipment that can be used for more than one job.
6. Avoid the work of holding. Use utensils that rest firmly so that both hands are free to work.
7. Let gravity work — a laundry chute, gravity feed flour and sugar bins, or a plan below the level of a cutting board.
8. Position tools in advance. Store them so they are placed in a position for immediate grasp and use.
9. Position machine controls and switches within easy reach.
10. Sit to work whenever possible.
11. Use a correct work height place.
12. Good working conditions are important in making the job more pleasant and less tiring. Good light, good ventilation, comfortable clothing, pleasant colors and order set the stage for work without strain.

The Workplace:

The design and location of the main activity and storage areas in the household contribute a great deal to energy savings. The design of a work place should provide:

1. The correct work height or storage within easy reach so the prinicples of good body mechanics can be applied.
2. Sufficient storage for all the things needed for the job or jobs to be done there.
3. Sufficient work space so the job progresses without confusion.
4. Storage arranged so that energy consuming positions need not be used, i.e., as little bending and reaching as possible, walking and standing at a minimum, and no climbing.

Michigan State Heart Association
Miss Ruth C. Kettunen
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ENERGY COST IN BODY ACTIVITIES

Work and activity can be classified according to the energy used in performance. Energy measurements are obtained by the use of an oxygen measuring device (a reapirometer) that is worn by the individual while performing a specific activity. A convenient method for expressing the measured oxygen is in terms of calories per minute. Such measurements can be used by the homemaker as a guide in comparing the energy cost for the different activities she performs. To help her decide the best use of her energy, it should be kept in mind, however, that there are many factors to consider, in relation to work or activities, such as pace, body weight, body strain, physical conditioning, poor work habits, age, tension, pressure, emotions, and anxiety, as well as one's personal feeling toward any particular activity. These all can contribute to the feeling of fatigue or discomfort one experiences in performing any activity.

The well homemaker will use her own feeling of discomfort and fatigue in determining what activity patterns are suitable for her. For the cardiac homemaker, the activities allowed are best determined by her physician.

The following tables can be used to find out if an activity is considered light, moderate, or heavy work. Table I refers to continuous effort as in industry and in some housework. Table II, for intermittent effort, is usually more applicable to the cardiac who is advised to interrupt work by short rest periods.

TABLE I CLASSIFICATION OF CONTINUOUS EFFORT

Class A: Up to five Cal. per/min., no restriction.
Class B: Up to 2.5 Cal. per/min., no restriction of ordinary activities (moderate work).
Class C: Up to 2 Cal. per/min., moderate restriction of ordinary activities (light work)
Class D: 1.5 Cal. per/min., marked restriction of ordinary activity.

TABLE II CLASSIFICATION OF INTERMITTENT

Class A: Up to 6.6 Cal. per/min., no restrictions.
Class B: Up to 4.6 Cal. per/min., moderate work.
Class C: Up to 2.7 Cal. per/min., light work.

The attached list of energy cost in activities from a variety of individual research studies has been assembled by Dr. Edward Gordon, Director of Physical Medicine, Michael Reese Hospital, Chicago, Illinois. This Energy Cost chart has been made available, as well as the classficiation of effort charts, through the courtesy of Dr. Gordon.

ENERGY COSTS IN ACTIVITIES

SELF CARE ACTIVITIES

Activity	Cost. Cal/min.
Rest, supine	1.0
Sitting	1.2
Standing, relaxed	1.4
Eating	1.4
Conversation	1.4
Dressing, undressing	2.3
Washing hands, face	2.5
Bedside commode	3.6
Walking, 2.5 mph (slow)	3.6
Showering	4.2
Using bedpan	4.7
Walking downstairs	5.2
Walking, 3.74 mph (brisk)	5.6
Propulsion, wheelchair	2.4
Ambulation, braces and crutches	8.0
Walking upstairs	14.0

HOUSEWORK TASKS

Activity	
Hand sewing	1.4
Sweeping floor	1.7
Machine sewing	1.8
Polishing furniture	2.4
Peeling potatoes	2.9
Scrubbing, standing	2.9
Washing small clothes	3.0
Kneading dough	3.3
Cleaning windows	3.7
Making beds	3.9
Ironing, standing	4.7
Mopping	4.2
Wringing by hand	4.4
Hanging wash	4.5
Beating carpets	4.9
Scrubbing floors	3.6

OCCUPATIONAL THERAPY ACTIVITIES

Leather punching and lacing, reclining	1.2
Leather tooling, reclining	1.2
Making link belt, reclining	1.3
Rug hooking, sitting	1.3
Chip carving, reclining	1.5
Knitting (23 stitches/min.)	1.5
Weaving, table loom	1.5 1.8
Copper tooling	1.6
Bookbinding, light	1.6, 1.9
Leather carving, sitting	1.8
Typing, rapidly	1.8
Weaving, floor loom	2.0
Chisel carving with mallet, standing	2.0
Chisel carving without mallet, sitting	2.2

OCCUPATIONAL THERAPY ACTIVITIES

Power sanding or sawing	2.2
Sawing soft wood	6.3
Sawing hard wood	7.5

RECREATIONAL ACTIVITIES

Painting, sitting	2.0
Playing cards	2.2
Playing piano	2.5
Driving car	2.8
Canoeing, 2.5 mph	3.0
Horseback riding, slow	3.0
Volleyball	3.5
Bowling	4.4
Cycling, 5.5 mph	4.5
Golfing	5.0
Swimming,. 20 yd,7min	5.0
Dancing	5.5
Gardening	5.6
Tennis	7.1
Trotting	8.0
Spading	8.6
Skiing	9.9
Squash	10.2
Cycling	11.0

INDUSTRIAL ACTIVITIES

Watch repairing	1.6
Armature winding	2.2
Radio assembly	2.7
Sewing at machine	2.9
Cobbling	3.0
Bricklaying	4.0
Plastering	4.1
Tractor ploughing	4.2
Wheeling barrow - 115 lbs; 2.5 mph	5.0
Horse ploughing	5.9
Carpentry	6.8
Binding sheaves	7.3
Mowing lawn by hand	7.7
Felling tree	8.0
Shoveling	8.5
Planing	9.1
Tending furnace	10.2

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HOUSEHOLD EQUIPMENT FOR THE HANDICAPPED

In a review of the literature one does not find much written in which a critical analyses of household equipment for the handicapped has been made. If correctly chosen, household equipment should allow the homemaker to function to the best of her ability within her physical and/or mental limitations. There must be an awareness on our part of the present market so that we are in a better position to inform her.

I. Principles That Determine Choice of Equipment
   - A. Materials from which constructed
   - B. Inherent characteristics
   - C. Source of supply
   - D. Cost
   - E. Needs of patient group

II. Evaluate Equipment with the Following Physical Limitations in Mind
   - A. Patients restricted to limited exertion
   - B. Patients with lower extremity disabilities (wheel chair)
   - C. Patients with hand difficulties such as joint limitations
   - D. Patients who can use only one-hand or have loss of power in one or both hands
   - E. Patients with problems of incoordination
   - F. Patients with diminished vision and loss of sight
   - G. Patients with hearing disorders

III. Evaluate Equipment with the Following Mental and Emotional Limitations in Mind
   - A. Patients who are mentally retarded
   - B. Patients who are or have been mentally ill
   - C. Patients with problems peculiar to old age and aging

IV. Note Characteristics of Kitchen Utensils
   - A. Materials from which constructed
   - B. Handles
   - C. Weight
   - D. Care
   - E. Cost
   - F. Efficiency
   - G. Adaptability

V. Note Characteristics of Small Electrical Appliances
   - A. Materials from which constructed
   - B. Handles
   - C. Weight
   - D. Controls
   - E. Care
   - F. Cost - operating (wattage), purchase (retail, wholesale)
   - G. Efficiency - energy saving features
   - H. Adaptability

"I. Note Special Features of Electrical Appliances
A. Materials from which constructed
B. Controls
1. Switches - location
type: rotary, pushbutton
easy to read and use
2. Thermostat
3. Timers

C. Convenience of:
1. Handles - size, heat resistant, easy to grasp
2. Doors - left or right hinged, bottom or top hinged, weight
3. Latch or closure - magnetic, mechanical
4. Shelves - pull-out, stationary, adjustable height
5. Base - provision for toe space or needed adjustment leveling device
6. Operation - simple, complex, instructions easily understood
D. Care
1. Ease of cleaning
2. Maintenance
E. Cost
1. Retail cost
2. Operating cost - wattage, water required, etc.
F. Selection
1. Vertical study - comparison of all models carried by particular company (convenience features)
a. Specification sheets
b. Appliance centers
c. Home Ec Depts. - local
d. Extension home agent
2. Horizontal study - comparison of equipment available from various companies for specified amount of money
a. Specification sheets
b. Appliance centers
c. Home Ec Dept. - local
d. Extension home agent

SELECTION OF HOUSEHOLD EQUIPMENT FOR THE DISABLED

Select suitable work heights for sitting and/or standing

Select or adjust household equipment that encourages good posture or ease of work.

Features to consider in choosing equipment:

RANGES:	Appropriate heights, conveniently designed and located controls, ease of cleaning, oven location, door opening.
REFRIGERATORS:	In-door storage, location and height of freezer compartment, shelves (type and adjustability), handle, location of crispers.
DISHWASHERS:	Top loading vs front loading,portable or built in, location and design of controls and dispensers.
SINKS:	Cabinet variations, sit-to-work features,utilization of space.
TABLE APPLIANCES:	Grills, toasters, can openers, hot plates, pressure pans, casseroles, roasters, hot pots, table ovens. Note weight handle insulation, switches,control design, ease of cleaning.
LIGHTING:	High level general lighting and spot lighting. Protect against glare at sitting areas.
IRONS:	Note weight, location of cord, fabric control, handle design.
IRONING BOARDS:	Adjustable, portable, built-in.
WASHERS:	Front loading vs top loading. Location and design of controls and dispencers.
Dryers:	Gas and electric. Location and design of controls. Door designand swing. Location and ease of cleaning lint trap.
VACUUM CLEANERS:	Upright, tank, canister, electric broom, mini, all with and without attachments. Note ease of moving and ease changing attachments. Manner of emptying bag or filter.
SMALL TOOLS FOR:	Laundry,cleaning, food preparation and dishwashing.

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CSU - 1974

B. O/k catalog - [illegible]

Cleo Living Aids - 3957 Mayfield Road, [illegible]

DEPARTMENT OF OCCUPATIONAL THERAPY
COLORADO STATE UNIVERSITY

MINNESOTA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

CHECKLIST FOR ACCESSIBILITY AND USABILITY OF BUILDINGS AND FACILITIES

In recent years architects, engineers, draftmen, and contractors have given increasing attention to the problems of the handicapped and aged when designing and constructing buildings and facilities of all types. To serve as a guide in this trend, the American Standards Association has developed and published a detailed set of specifications for use in the construction industry. The following items, based on these standards, are intended to serve as a simple check list for those planning and designing buildings and facilities for use by the public. For more detailed information, consult the American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped, ASS 117.1, which are obtainable free of charge from the Minnesota Society for Crippled Children and Adults, 2004 Lyndale Avenue South, Minneapolis, Minnesota 55406.

Yes	No	
		PASSENGER ARRIVING-LEAVING SPACE
___	___	Is there a safe place designated for passengers to get into and out of cars (may be on the street or off the street)?
___	___	Is that space zoned to prohibit parking?
___	___	If space is at curbside, is the curb ramped up to the sidewalk?
		WALKS
___	___	Are public walks at least 48 inches wide (60 inches needed to facilitate passing where wheelchair traffic is heavy)?
___	___	If a walk is sloped, is the grade not greater than 5% (1 ft. of rise for 20 feet of length)?
___	___	If there are steps in the walks, are there also ramps to by-pass the steps?
___	___	If doors open onto walks, is there a level platform at least 5 ft. by 5 ft.?
		PARKING
___	___	Is there parking available for handicapped either at end of rows or in diagonal or head in (perpendicular) stalls 12 ft. wide?
___	___	Are pedestrian (wheelchair) inclines or sloped walks provided in place of, or in addition to, curbs and steps from parking area?
		ENTRANCES
___	___	Is there at least one groun level or ramped primary entrance usable by individuals in wheelchairs?
		DOORWAYS
___	___	Do doorways have a clear, unobstructed opening of at least 32 inches? (Revolving doors unacceptable unless accompanied by

Yes NO

Doorways - Continued

___ ___ If there are two leaf doors side by side, does one leaf provide at least 32 inches of clear opening?

___ ___ Do doors in series (vestibule doors) have at least 84 inches between sets?

___ ___ Are thresholds flush with the floor? If not, are they less than 2 inch?

RAMPS

___ ___ Do ramps rise no more than 1 foot for every 12 feet of length? -

___ ___ Does the ramp have handrails 32" from the surface on both sides?

___ ___ Do handrails extend 1 foot beyond the top and bottom of the ramp?*

___ ___ For rest and safety, do long ramps and sloped walks have level platforms at least every 30 feet?

___ ___ ELEVATORS

___ ___ Are elevators accessible on the same level as entrance?

___ ___ If this facility is more than one level (including basement, balcony, etc.) are all levels served by an elevator?

___ ___ Does the elevator doorway provide at least 32 inches of clear unobstructed opening?

___ ___ Is the elevator cab at least 4 feet wide by 6 feet in depth?

___ ___ Is the space between the building floor and the elevator floor ½ inch or less?

___ ___ Are the controls (including emergency switches, light, etc.) no more than 48 inches from the floor?

STAIRS

___ ___ Do steps have rounded nosings with sloping risers?

___ ___ Are there handrails on both sides of all stairways?

___ ___ Are stairway handrails mounted 32 inches above front edge of stair tread?

___ ___ Do handrails extend 1 foot beyond top and bottom step?*

*Extension beyond top or bottom should not be a hazard in itself by projecting into traffic areas, doorways, etc.

Yes No

___ ___ Are step risers no greater than 7 inches in height?

TOILET ROOM

___ ___ Do doors to toilet rooms (men and women) have at least 32 inches of clear opening?

___ ___ Is there at least one toilet stall that is a minimum of 3 feet wide by 5 feet deep?

___ ___ Does that toilet stall have a doorway with 32 inches of clear opening?

___ ___ Does the toilet stall door swing out?

___ ___ Is that toilet stall also equipped with handrails on both sides, 33 inches from the floor?

___ ___ Is the toilet seat 20 inches from the floor?

___ ___ Will the area from the toilet room entrance to the stall allow a wheelchair to pass (32 inches of unobstructed space?)

___ ___ Is the bottom edge of at least one mirror no higher that 40 inches above the floor?

___ ___ Are lavatories, sinks mounted so that persons in wheelchairs can utilize them (29 inches from the floor to top of wheelchair armrest)?

___ ___ Are soap, towel and other dispensers mounted no higher than 40 inches above the floor?

TUB

___ ___ Is there a handrail (grab bar) securely mounted at either the foot or head end of the tub which can easily and safely be reached for getting in and out?

___ ___ Is there a handrail mounted parallel to the length of the tub to safely facilitate sitting or rising?

___ ___ Does the bottom of the tub have an abrasive anti-slip surface?

SHOWER

___ ___ Does shower stall doorway have at least 32 inches of clear opening?

___ ___ Is shower stall floor level with room floor without an obstructing riser or curb between?

Yes No

___ ___ Does shower stall floor have an anti-slip surface?

___ ___ Is there a handrail on at least one side of the shower stall when facing the shower head and also near the stall entrance to facilitate going in and out?

___ ___ Is there a seat in the shower stall? NOTE: a fold-down, permanent or portable seat may be used, but it must have a smooth, easily cleaned surface. A solid mold toilet seat is recommended.

___ ___ Is the shower equipped with mixing faucet with non-scalding temperature control valve? NONE: A hose type, detachable shower head is preferable.

DRINKING FOUNTAINS

___ ___ Are water fountains both hand and foot operated?

___ ___ On wall-mounted fountains, is the spout not higher than 36 inches from the floor?

___ ___ On floor-mounted models, is there a side fountain 30 inches from the floor?

PHONES

___ ___ Do telephone booth doorways have 32 inches of clear opening?

___ ___ Are coin drops not higher than 48 inches from the floor?

___ ___ Are some phones equipped with receiver volume control for the hard-of-hearing?

___ ___ Are phones for hard-of-hearing readily identifiable?

CONTROLS

___ ___ Are switches and controls within reach from wheelchair position (not higher than 48 inches from the floor)?

WARNINGS FOR DEAF AND BLIND

___ ___ Are there raised letters or numbers for identifying rooms?

___ ___ Are they at the side of the door 5 feet above the floor?

___ ___ Are potentially dangerous areas identified by knurled door handle or knob?

___ ___ Are warning signals both audible and visible?

___ ___ Are signs, lights, and hazardous hanging objects at least 7 feet above the floor?

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Minneapolis, Minn. 55405

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HOW TO ORDER

These visual materials are available through: Audio Visual Service
Colorado State University Fort Collins, Colorado 80521

Slides – for purchase only – not available for preview. Allow one month for delivery.

1. A HOME DESIGNED FOR ACTIVE LIVES IN WHEELCHAIRS – 42 2x2 slides ~~$15.00~~ 30.00
2. THIS KITCHEN SAYS, "PLEASE BE SEATED." 32 2x2 slides ~~$12.00~~ 24.00

Films for Rent – all films are available for rent at $4.00 per film. This covers postage one way except for Alaska, Hawaii and Puerto Rico which must be sent airmail. Please give first and second choice of show dates several months apart to assure availability. Order by individual film title(s).

Films for Purchase

1. A HOME DESIGNED FOR ACTIVE LIVES IN WHEELCHAIRS. $60.00
2. THIS KITCHEN SAYS, "PLEASE BE SEATED." $60.00
3. DIFFERENT WAYS TO PREPARE POTATOES USING ONE HAND. $50.00

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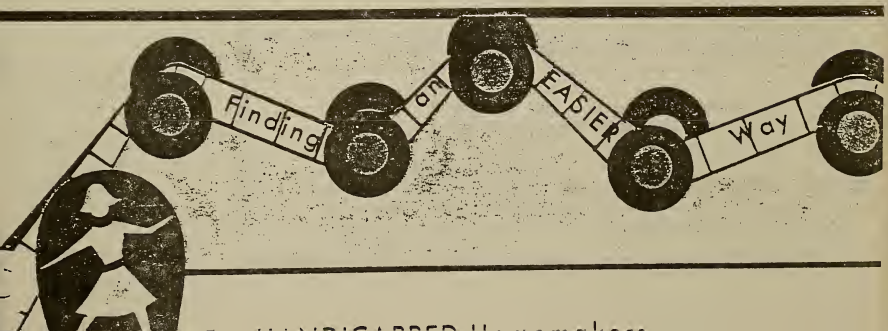

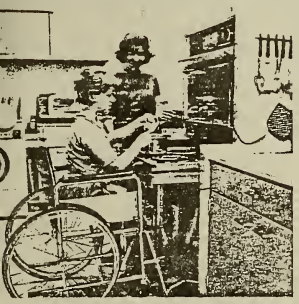

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SLIDES

COLOR SLIDES – for purchase only – not available for preview. See How to Order section.

A HOME DESIGNED FOR ACTIVE LIVES IN WHEELCHAIRS. 42 2x2 slides showing o home designed and built by a polio couple. Emphasis is on kitchen.

2 THIS KITCHEN SAYS, "PLEASE BE SEATED." 32 2x2 slides. A clinic kitchen designed for teaching students and guiding homemakers in making odaptations for their homes using standard units.

FILMS

Silent – accompanied by commentory to be read with film. 16mm.

1. A HOME DESIGNED FOR ACTIVE LIVES IN WHEELCHAIRS. Color.10 mi e
   Home designed ond built by polio couple with small child. Emphasis is on kitchen and interior ond exterior of planning of home.
2. THIS KITCHEN SAYS, "PLEASE BE SEATED." Color. 9 minutes.
   Shows preparation of a meol in clinic kitchen from a wheelchair.
3. DIFFERENT WAYS TO PREPARE POTATOES USING ONE HAND. Block ond white. 9 minutes.
   Demonstration of preparing potatoes using one hond with emphasis on time and energy required.

Sound – oll black ond white, 16mm.

1. GOOD FOOD IN LESS TIME. Time and energy saving ideas make good meals easier to prepare. 8 minutes.
2. FUNCTIONAL CLOTHING. Two young women model functional clothing designed for physically hondicapped homemakers. 15 minutes.
3. "I WANT TO DRESS MYSELF!" Special features in children's clothing help the child to help himself. 6 minutes.
4. STORAGE THAT WORKS FOR YOU. A disabled homemaker is shown using o voriety of storage facilities important to homemakers. 20 minutes.
5. EVERYTHING IN ITS PLACE? Convenience and organization, key factors in home management. 10 minutes.
6. A LOOK AT HOMES FOR LIVING. Architectural features and home furnishings to meet chonging family needs. 20 minutes.
7. TIME ON YOUR HANDS? Activities that challenge hands ond minds at hom and community. 21 minutes.

NUTRITION AND THE AGING ADULT

by

Terry L. Sadler

Dr. Richard L. Maughan
HPER 531
Health Aspects of Gerontology

The aging process is still poorly understood by modern scientists. The fundamental causes of body deterioration and the many physical difficulties associated with aging are of increasing interest to a society that sees is citizens living longer and retiring earlier. There is an increasing amount of evidence that seems to point to nutritional inadequacies as a cause of many of the problems associated with old age. Nutritional deficiencies have been found with distressing frequency by researchers who have conducted careful surveys of older persons. There are many environmental and socio-economic factors that come into play. Modern food fads often lead older people to eat unusual and inadequate diets. Economic handicaps may present themselves in many forms. Most obviously, lack of money for food poses a tremendous problem for the elderly. Also lack of storage, cooking facilities and lack of transportation to markets create difficulties. In addition, anxiety stemming from money problems, family contacts, social status and living quarters play a role in improper eating habits. Monotonous diets or reliance on nutritionally deficient prepared and packaged foods are often the result. Physical problems such as loss of teeth or digestive disturbances may also affect the choices of the aging. Finally, many older persons have an inadequate appetite stemming from just plain loneliness.

motivation also lost." [3]

A fairly high proportion of older Americans are burdened with diseases and conditions that are thought to be brought about or at least intensified by inadequate dietary habits. It is interesting to compare the eating habits of Americans with the eating habits of residents of areas in which people expect to live to a ripe and healthy old age, ie., areas of Ecuador, West Pakistan and the Georgian highlands of the Soviet Union. In the first place, Americans consume an average of 3300 calories per day while the highest average for the residents of these other areas was around 1900. Secondly, the daily fat intake for Americans is 157 grams (largely animal fats) as compared to 34 - 60 grams in these other areas (animal fats not predominant). The low incidence of arteriosclerosis and atherosclerosis and other diseases associated with old age is in part attributed to the high protein, low fat, low-calorie diets eaten by the members of these long-lived peoples.[4] While there are other factors such as exercise, climate and heredity that play a significant part in prolonging the lives of these people, most researchers agree that the diet of these populations is an important contributing factor.

With advancing age, the organs in the body function at decreasing rates. By age 75, the brain weight has diminished to 92 percent of its value; nerve velocity is at 90 percent; the basal metabolic rate has decreased to 84 percent and cardiac output at rest to 70 percent. Maximum breathing

for the aged, can be overcome with good diet, particularly the ingestion of lean meats and green vegetables(properly prepared).

Both atherosclerosis and arteriosclerosis are thought to be partially caused by too much saturated (animal) fat in the diet. Again good nutrition practices can retard or prevent the build up of cholesterol and triglycerides which are thought to be the culprits in the cause of both these diseases. Strictly limiting the amount of animal fats and increasing the amount of polyunsaturated fats (vegetable) in the diet is thought to be an effective means of prevention of these two old-age conditions.[7]

Another threat to a healthy old age is obesity. Since the metabolic rate decreases as we age, calorie intake should also be decreased. This often calls for a change in basic eating habbts. Carbohydrates and fats should be reduced while protein intake should remain adequate, generally between 55 - 70 grams per day.[8] The danger of obesity is that it increases the workload on the organ systems of the body, particularly the cardio-vascular, and that it increases the likelihood of the occurence of diabetes and mellitus.[9]

Osteoporosis, the gradual softening of the bones, causing deformaties of the spinal column, is another condition that can be largely prevented by adequate nutrition. The use of milk and dairy products and the eating of green vegetables will provide the calcium and protein needed to help prevent

people living in the Greeley area.

The program provides a hot meal to the recipient's house five days a week, Monday through Friday. The Bonell Meals on Wheels has 40 participants who receive the services and pay for the meals according to their financial capabilities. This sliding scale has been adopted to assure that some of the people in need of a hot meal may receive the service. The fee of $1.10 per meal is charged to those who can afford to pay. Of the 40 people in the program, there are two who receive the service free. The participants pay in advance for their meals.

Funding for the program has been accomplished by two means in the past: 1. Program service fees as established previously 2. Donations and memorials. The Weld County United Way will be a source of additional funding next year. The allocation of $5,000will be added to the Meals on Wheels program budget which should allow a great expansion of services. Each meal prepared by Bonell cost the Meals on Wheels program $ .90, consequently, the program will be greatly assisted by the United Way funding.

The dinners are prepared in the Bonell kitchen under the supervision of Ms. Mary Margaret Dugger, the Director of the Bonell Meals on Wheels. The meals consist of meat, chicken or fish, potatoe or potatoe substitute, vegetable, salad and desert. Beverages are not provided. Special diets are avail-

able if necessary. The meals are served in plastic containers.

All meals are delivered by volunteers. The participation by these volunteers is one of the most important facets to the program. They not only deliver the meal but they provide an intangible social climate that reduces the loneliness associated with the mealtime. Most of the volunteers are elderly and they too enjoy the opportunity to visit and socialize with the participants.

The dinners certainly don't satisfy all the nutritional requirements of the elderly but the individuals are receiving a balanced meal once during the day. The program services only 40 people presently but shows an awareness of the problem and while only a small proportion of those people needing the service are handled by the agency, Meals on Wheels has established a pattern which may be expanded and improved upon in the future.

Another program which is atempting to provide a more nutritious seeting for the elderly in Greeley is the Foods Incorporated group which operated out of the First Presbyterian Church in Greeley. This is a voc. tec. program in conjunction with school district 6 where students from all three Greeley high schools participate three hours per day in a restraunt type setting where the elderly may come to the church and purchase a hot meal or choose exactly what they desire from the menu.

The students plan, prepare, serve, bus, clean and cashier for the program. The menu offers two choices . The price of a hot meal is $ .75. This price does not include the desert which must be purchased separately.

Seventy to seventy-five people participate in the program daily. Foods Incorporated does not advertise because they are limited by the number of students who may be interested in the program. A menu is published in the local paper daily. Most all of the participants walk to the church for the meal. The various ages of the individuals in the program range from 55 to 93 years of age.

Ms. Dorris Nelson, a home economics instructor and the supervisor of Foods Incorporated program feels that not all of the participants are in need of a low cost meal but they participate because they enjoy the social aspects of the program.[12] Meals Inc. provides the elderly with an opportunity to leave the house, meet with friends and communicate with high school students. They enjoy conversing with the students while they prepare the food and set the table.

Foods Incorporated receives some state funding to assist in off-setting the expenses. Other programs similiar to Foods Inc. are receiving various forms of funding demonstrating that society is recognizing the need to supplement the nutritional needs of the elderly.

Many private business concerns have been realizing a profit

from the geriatric population by operating cafeterias that offer a variety of foods from which the elderly can select. These cafeterias are providing an opportunity for the elderly to eat a nutritious meal if they can afford it and if they make a proper selection of foods.

Nutrition education is a needed part of any program which is attempting to improve the eating habits of the elderly. Group and individual counseling should be completed by knowlegeable people with dietetic backgrounds who understand the many and varied prejudices, dultural backgrounds and environmental circumstances of each individual. Proper shopping and cooking techniques could be taught to increase general knowledge among the elderly. The education training is essential prior to old age so that proper eating habits may be established while young.

The community has a great responsibility to improve the nutritional plight of the elderly. Our youth-oriented society is finding more geriatric individuals who have been set apart from the mainstream of life only to find that they have many years left that very well could be made healthier and more worthwhile by sound dietary practices.

Through government funding, community and individual concern and re-education programs, many of the nutritional deficiencies that handicap older people could be reduced or eliminated. Cooperative services could not only provide a

balanced diet but also a friendly mealtime atmosphere for easing the loneliness that often accompanies old age. A dedicated community could do much to improve the health of their elderly, but an important part of the program might be the possible reduction of alienation and apathy among the elderly through increased social contact with the community.

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1. John B. Martin, "Nutrition and the Aging," Nurtition News, April, 1971, Page 1

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3. John B. Martin, loc. cit., Page 1

4. Alexander Leaf, "Getting Old," Scientific American, September, 1973, Pages 44 - 52

5. Ibid., page 52

6. Harold J. Taub, "Slow Down Your Aging with Brewer's Yeast," Prevention Magazine, October, 1972, pages 57 - 63

7. "Recommended Dietary Allowances," Dairy Council Digest, November - December, 1968, Page 1

8. Elmer L. Severinghaus, "Nutritional Problems After Fifty," Food and Nutrition News, February, 1972, Page 1

9. John B. Martin, loc. cit., Page 1

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CLOTHING FOR THE HANDICAPPED

Dressing problems arise because of:

- Poor coordination
- Poor balance
- Weakness, particularly in upper extremity and fingers
- Spasticity
- Appliances i.e. braces, crutches
- Mental retardation and/or perceptual abnormalities
- Paralysis in upper or lower extremities or both

Special clothing needs occur because of:

- Incontinence
- Postural deformities or atypical physical development
- Aberrant body temperature control
- The need to slide in transfers

For:	Suggested Solutions
Comfort	Larger sizes (but not too large) Larger openings - neck, armhole, waist, legs Stretch construction Action pleats Skirt widths easy but not full
Ease of Dressing	Few pieces Roomy openings Front or side front openings Few or easy fastenings - large buttons, Velco, zippers wi tabs, large hooks, elastic
Fit	Action pleats Two piece garments Gussets Adjusted hemlines
Maximum wear	Strong materials; strong construction Reinforcements on seams and double fabric at points of we
Fashion and Attractiveness	Colors that are becoming - quiet tones with brighter tone for accessories Simple, classic designs Designs which camouflage deformities
Ease of care	Soil repellent finishes Minimize garments requiring dry cleaning Truly wash and wear (65 - 80% polyester fiber blends) Garment design that makes ironing or pressing easy Fabric design that does not show soil (color or pattern)

CLOTHING

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